

SEPTEMBER 1960

*National*  
**SAFETY  
NEWS**

A NATIONAL SAFETY COUNCIL PUBLICATION



**BIG BUILDINGS ARE HER BEAT**

# new

## **M-S-A® ONE-HALF-HOUR CHEMOX®**

Try this new lightweight oxygen breathing apparatus on for size. Note the simplified design. Save on low operating costs. Watch the wearer's quick acceptance. Here's why:

### **PRESSURE RELIEF VALVE**

*Fully automatic — no manual operation required.*

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Monocular lens CLEARVUE\*  
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They're made of strong, long-lasting nylon.

### **BREATHING TUBE**

Just a single short one. But close convolutions greatly extend its length for full head movement.

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Round, simplified, inexpensive. Rated at 30 minutes. Materially reduces operating costs.

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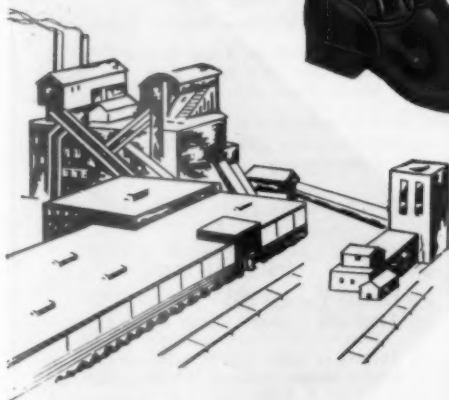
**H997—8" Lace-to-Toe Boot**, one of many versatile styles.



**H999—Popular 10" Engineer's Boot**, oil resisting sole.



**H294—Insulated Leather-Lined 8" Boot**, cushion insole.



**H681—Water-Proof Type 8" Boot**, flexible, comfortable molded construction. See descriptions of all Hy-Test styles below.



Whatever the industry . . . whatever the condition, you will find the safety boot best suited for the job among HY-TEST's many styles. Each is designed to give your men the kind of protection, comfort and features they expect . . . including, of course, the famous Austempered Anchor Flange Steel Box Toe. Be prepared for the season ahead . . . order today.

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**H291—Brown leather 8" boot**, oil-resistant reinforced double sole and heel, storm welt.

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**H681—Brown Syl-mer leather 8" water-proof type** molded construction boot, Resist-Oil Grit sole and heel.

**H682—Brown Quilon-treated leather 8" molded construction boot**, Resist-Oil Grit sole and heel.

**H930—Tan Quilon-treated leather 8" boot**, cushion insole, Resist-Oil double sole and heel, storm welt.

**H933—Brown glove 8" boot**, oak leather reinforced full double sole and heel.

**H934—Brown glove 8" boot**, Neo-Card (Neoprene with Nylon card) outsole and heel.

**H936—Spark-resisting black retan 10" boot**, Resist-Oil (Neoprene) double sole and heel.

**H964—Cush'n-Guard black rosite 8" boot**, Resist-Oil double sole and heel, shock-absorbing instep protector.

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**H987—Black water-repellent 9" Hy-Climber double leather boot**, Neo-Card sole and logger-type heel, long counter, wide steel shank, storm welt.

**H991—Tan leather 8" boot**, cushion insole, Cellular Grit slip-resistant sole and heel, storm welt.

**H994—Black Quilon-treated 7½" Wellington pull-on**, non-metallic Resist-Oil sole and heel, storm welt.

**H995—Tan leather 7½" Wellington pull-on**, non-metallic Resist-Oil sole and heel, storm welt.

**H996—Black rosite 8" Chemical boot**, Resist-Oil double sole and heel, storm welt.

**H997—Brown glove 8" lace-to-toe boot**, Resist-Oil (Neoprene) double sole and heel, storm welt.

**H999—Black retan 10" engineer's boot**, Resist-Oil (Neoprene) full double sole and heel, storm welt.



# National SAFETY NEWS

A NATIONAL SAFETY COUNCIL PUBLICATION

Vol. 82, No. 3

SEPTEMBER 1960

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## NATIONAL SAFETY COUNCIL

Chartered by the Congress of United States



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### THE COVER

Mrs. Margretta "Buffy" Rottmayer is first aid nurse on the 20-story Hartford Fire Insurance Company Group skyscraper project in Chicago. Here, she pauses on the construction site after one of the frequent tours she makes daily. Although the rigors of getting around and treating injured men are more difficult here than in most industrial nursing situations, Buffy is enthusiastic about construction nursing.

38,000 copies of this issue were printed

National Safety News, September, 1960



## Hi-cut weather ahead!

### **Wet, cold feet are a health and safety hazard!**

For every man who works out doors, even part of the time, Lehigh's hi-cut leather boots provide important added protection against wind, wet, snow and freezing cold. Here are just a few of the Lehighs that add WEATHER protection to TOE protection. There's one for every outdoor job. Ask your Lehigh salesman.



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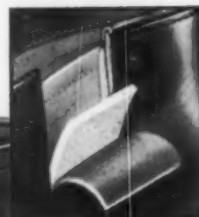
No. 1930  
brown 8-inch, Miragum sole



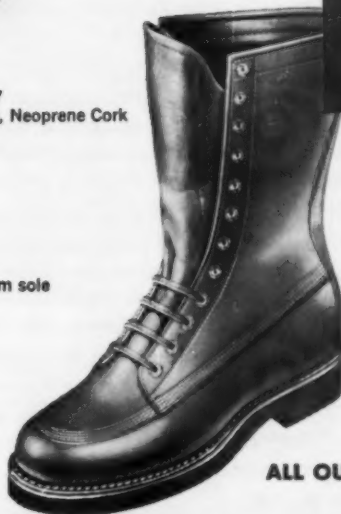
No. 1915  
engineers' 8-inch



No. 1914  
engineers' 10-inch



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with  
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## Safety Semantics

THOSE MISHAPS which cause a man to lose time from the job beyond the day or shift used to be called lost-time accidents. Now the official term is *disabling injuries*, though the old name persists.

Statistically, injury is the more accurate term, since the records kept by federal, state, private, and public organizations keep statistics of injuries, not of accidents. If no disabling injury results from the accident, it doesn't count in the score.

When it comes to safety propaganda, it is claimed the use of *accident* when you mean *injury* sets up a mental block. The word accident is usually interpreted as something unplanned, sudden, and unexpected—something that happens entirely by chance. But injuries are caused.

Now that recalls one of the oldest safety slogans: "Accidents do not happen—they are caused." Certainly, if someone trips over a piece of pipe left in an aisle, whatever you call the result was caused, even though the only injury was to the victim's dignity.

At the Early Morning Classes of the 1959 National Safety Congress, Dr. Arthur Secord told his audience:

"I would like to have you people—each of you—for the next year, any time you see the word 'accident' on a bulletin board, on a memorandum, on a sign, ask yourself this question:

"'Would that be improved psychologically if the word 'accident' were taken out of there and in its place put the word we mean, 'injury'?"

We're not at all sure about any psychological benefits from the change. The public is used to the word *accident*. It suggests something unpleasant, even disastrous. Few people now regard an accident as purely the will of God, even though their attitude toward preventive measures often suggests a feeling of fatalism.

There is another side to this argument. Accidents frequently result in extensive property damage, confusion, and lost production, even though the bandaged victim is able to return to the job.

All told, these minor mishaps—each a potential disabling injury—cost industry plenty. And certainly, safety people have no reason to apologize for their interest in preventing these economic losses so important in personal and national welfare.

In traffic safety there are some who would like to substitute *crash* for *accident* in any case involving a motor vehicle. The one-syllable word does have more impact, but, like *accident*, it doesn't necessarily imply personal injury.

Moreover, it doesn't seem to fit those cases where a car hits something resilient—like a pedestrian. *Thud* would be more descriptive.

At least we can go along 50 per cent with Dr. Secord's concluding exhortation:

"Let's stop preventing accidents and get to work preventing injuries!"

Probably nobody in the audience took that appeal literally. More likely, they suspected the speaker was merely using a little rhetoric to prove a point.

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# The Count Down has already started on the NEXT SERIOUS EYE ACCIDENT



It is estimated that 27% of industry accidents are eye accidents. 3% are injuries to eyes, but an additional 24% are caused by poor vision due to faulty eye protection. Official government estimates show these eye-accidents cost industry millions of dollars each year. Further, poor sight holds back production anywhere from 25% to 40%. No wonder foul sight is one of your largest safety-efficiency problems.

Both types of MAGIC Cleaning Stations are Science's answer to foul sight. For goggles and glasses stay dirty and dangerous unless you make it as easy as possible to clean them. Choose the type station to fit your conditions:

About the MAGIC Lens Tissue that polishes and protects lens as it cleans: Unmatched in quality, it far exceeds scientific specifications. Each sheet is BIG. It's 50% larger than usual and has twice the tearing strength. One sheet is big enough to clean the largest safety goggles. Every square inch is packed with Silicone's Sparkle Power — on both sides of the sheet. It is interfolded, serving only one sheet at a time — not in bunches. And that's an exclusive feature with MAGIC. Yet it costs less. The compact dispenser is self-mounting; no screws, no drilling. Just stick it to the wall. No maintenance.

No adjustments. No wear. No moving parts. Absolutely indestructible.

About the MAGIC Heavy-Duty Lens Cleaning Station: It's for dirty, oily areas or where Anti-Fog protection is needed — on plastics or any eyewear. MAGIC combined Cleaning & Anti-Fog Fluid combines all needed ingredients. And it's pressure-packed. Just touch the can and — *PRESTO* — the can does the rest. 1,400 applications per can. One can equals 4 old-fashioned bottles. No pump. No bottles to refill. Indestructible dispenser — with no moving parts — releases sheets 1-by-1, not in bunches, greatly reducing waste. Or, to use your home-made fluid, we can supply our Adapter (\$2.70) with a giant 16-oz. bottle and plunger complete. MAGIC Heavy-Duty Paper, not silicone-treated, is superb, strong, wet-strength paper. Like its sister-product, the world's finest quality. No scratching on plastic, and no lint.

Buy the leader and save money. Buy MAGIC. Exchange all your other stations for MAGIC FREE.

Magic Silicone Lens Tissue (6 refills (800) sheets ea.)	Ctn. \$ 8.40
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MAGIC Silicone  
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MAGIC Pop-up pack in self-dispensing box for your desk or any place in the office, plant or laboratory, \$11.95 per carton of twelve boxes.



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# THE SAFETY VALVE



*Nothing human is alien to me*

—TERENCE

## MANPOWER BY THE POUND

THE TABLES of desirable weights issued by the Metropolitan Life Insurance Company have been used for years as a guide to doctors in appraising their patients' prospects for survival in a world of tempting calories.

According to the Metropolitan, the population of the U.S.A. is totting around some 750 million pounds of excess weight. (This writer is responsible for some 15 pounds of that amount.) One man in every 5 is 10 per cent over the average weight; more than 1 in every 20 is 20 per cent above the average. And in spite of all their conversational dieting, the women surpass the men when it comes to putting on pounds.

The overweight can't say they haven't been warned. Syndicated health columns broadcast advice for the obese regularly. Fat prospects for insurance have been turned down or rated up. But it seems to do about as much good as cancer warnings to cigaret addicts.

Now employers are beginning to take a dim view of employees with a corn-fed look. Some time ago, Director J. Edgar Hoover of the FBI found he had 30 pounds too many. He followed the doctor's diet and got back to normal. Some of his agents also had figures that called for a program of dietary austerity. He warned them to train off the lard—or no promotions or raises.

Denver, it is reported, is hiring and firing teachers by the pound. The city's health service department has listed minimum and maximum weights for appointment and tenure. If a teacher is 5½ ft tall, she must weigh in between 99 and 170 to land a teaching job; for tenure, the range is 116 to 142. Reason announced for the weight-watching program: the city's schools should be staffed with "adults who are physically, emotionally, and mentally fit."

Many large companies are organizing to fight fat through their health maintenance programs. When employees receive free physicals, the heavies get personalized guidance. Some company cafeterias list the calorie content of food items on the menu.

Airlines and railroads and bus and trucking companies are also tightening up rules for physical appearance. An overplump stewardess is, of course, unthinkable, but similar standards are being applied to less glamorous jobs. Applicants who are excessively overweight are turned down; those already on the payroll are warned to trim down.

Want to reduce? There's no lack of literature on the subject. No issue of a woman's magazine is complete without an article on slimming. In every bookstore and drugstore there are clothbound books and paperbacks on the subject. Insurance companies issue

pamphlets, and company doctors and private practitioners have advice on tap. Take your choice.

Sometimes there is an emotional reason for overeating and its sad results. For some folks nibbling affords a release like chain smoking and tipping.

People on a diet, says the *Newsletter of Industrial Psychology, Inc.*, need frequent check-ups . . . "they lose weight fastest on a very low fat diet and a lot of encouragement."

## ARE YOU LISTENING?

MOST OF US, we are told, listen to speeches at only 25 per cent efficiency. That score is, presumably, for ideal conditions. It might be reduced considerably by poor ventilation in the meeting room, late hours, and a speaker whose voice doesn't carry beyond the third row.

It takes skill and effort to absorb information as well as to impart it. With the National Safety Congress coming up, you can benefit from these 10 guides to listening, suggested by Dr. Ralph G. Nichols, head of the Rhetoric Department at the University of Minnesota Institute of Agriculture, quoted by *Factory*.

"Learn to milk a speech or discussion for information you need," says Dr. Nichols. "You may find some when you least expect it." Here are his suggestions:

1. Be interested in the topic. If you decide it's dry as dust after the first few sentences, you'll rationalize future inattention.

2. Judge contents, not presentation or delivery.

3. Hold back your instinct for rebutting the speaker's argument. Wrapped in your own mental processes, you may lose his subsequent passages.

4. Discriminate between fact and principle, idea and example, evidence and argument.

5. Make brief notes on the speaker's salient points, but not a verbatim record.

6. Give the speaker your undivided attention. It may be hard work (particularly during a week of meetings), but if you're caught napping you'll miss some useful information.

7. Fight distractions by concentrating. Poor listeners tend to be distracted, even when face-to-face with a speaker.

8. Listen with an open mind. Overcome emotional conflicts with the speaker's contradictory views on your pet notions, convictions, and complexes.

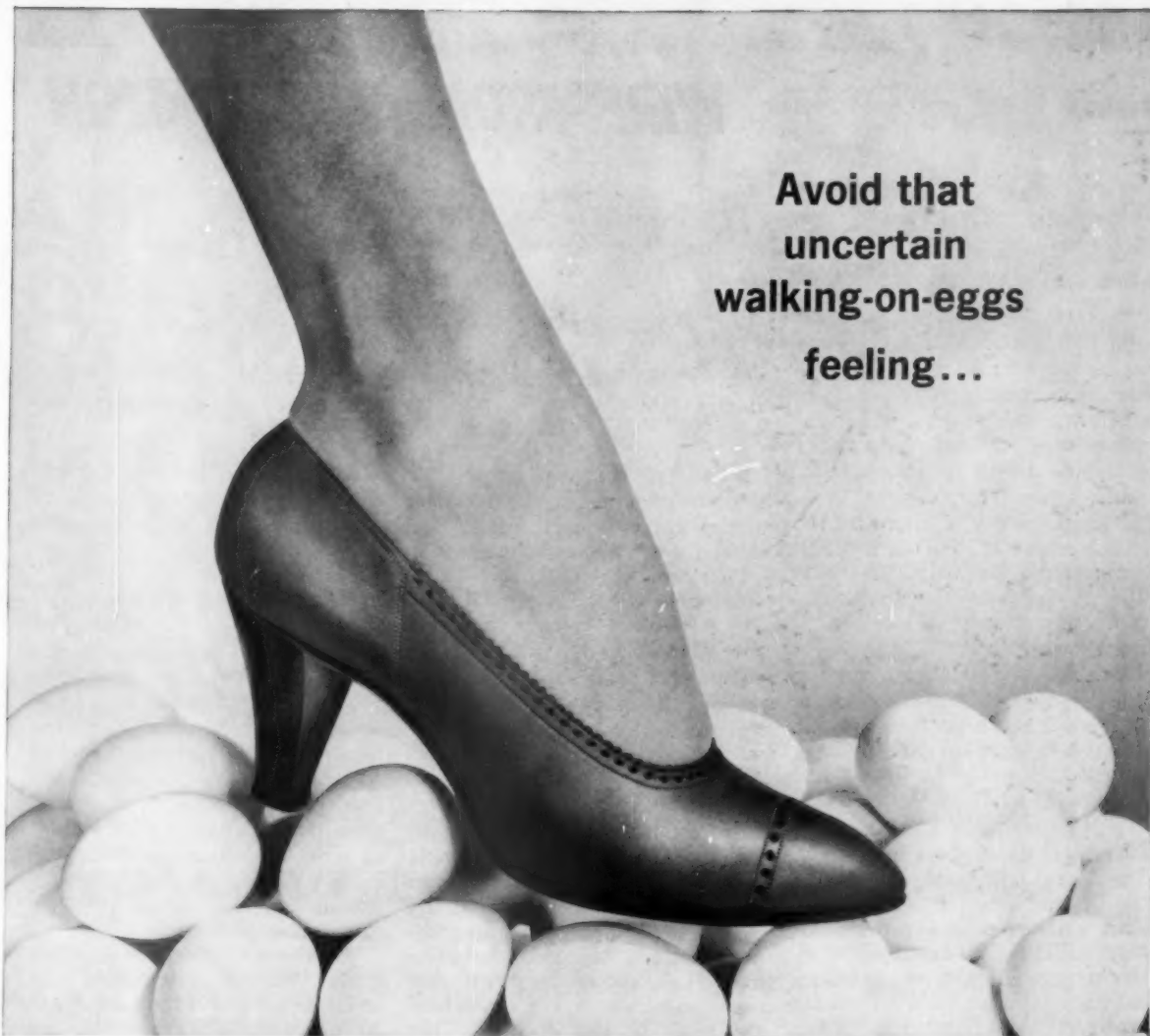
9. Develop your mind to understand difficult expository material. You can't be a good listener when the speaker's nomenclature is way over your head.

10. Don't waste your thought speed. People speak at about 125 words a minute, but you can think easily at four times that rate. You can use the extra thinking time to summarize remarks and anticipate subsequent points.

You probably won't be able to rate 100 per cent on these points. But if you can double the average of 25 per cent, Congress attendance should pay off handsomely.

*Carman Fish*

National Safety News, September, 1960



Avoid that  
uncertain  
walking-on-eggs  
feeling...

**For positive traction underfoot, plus lasting beauty,  
use floor wax containing LUDOX—Du Pont's anti-slip ingredient**

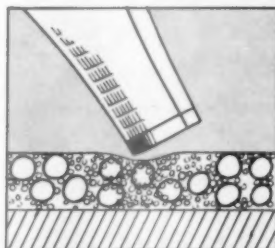
With "Ludox" in the floor wax you get added safety underfoot. "Ludox" acts like a brake that promotes easy, effortless walking. And you get the lasting beauty only a fine wax can give your floors. Scratches and scuffs can be buffed out

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## WIRE FROM WASHINGTON

By HARRY N. ROSENFELD

Washington Counsel, National Safety Council

CONGRESS RESUMED its legislative sessions, under the shadow of the forthcoming presidential campaign in which some aspects of safety could well become political issues.

**Political Party Platforms.** The platforms adopted by the Republican and the Democratic National Conventions both contain pledges concerning a variety of safety problems:

**Mass Transportation Systems.** The Republican platform promises vigorous support to "a stepped-up program to assist in urban planning, designed to assure far-sighted and wise use of land and to coordinate mass transportation and other vital facilities in our metropolitan areas." The Democratic platform proposes "a ten-year action program to restore our cities and provide for balanced suburban development including the following: . . . federal aid for comprehensive metropolitan transportation programs, including bus and rail mass transit, commuter railroads, as well as highway programs and construction of civil airports." Since "local governments have found increasing difficulty in coping with such fundamental public programs as . . . mass transportation," according to the Democratic platform, it promises to "expand federal programs to aid urban communities to . . . transport their suburban commuters to and from their jobs."

**Air Pollution.** The Republicans pledge "federal authority to identify, after appropriate hearings, air pollution problems and to recommend proposed solutions." The Democrats say they "will step up research on pollution control, giving special attention to: (1) the rapidly growing problem of air pollution from industrial plants, automobile exhausts, and other sources . . ." They propose

This report is an information service. Publication does not imply National Safety Council approval of or opposition to any legislation mentioned

"a ten-year action program" for cities through federal aid in combatting air pollution, because "the states and local communities cannot go it alone."

**National Transportation System.** The Republicans favor "continued improvement of our vital transportation network, carrying forward the vast Eisenhower-Nixon national highway program and promoting safe, efficient, competitive, and integrated transport by air, road, rail, and water under equitable, impartial, and minimal regulation directed to those ends." The Democratic statement is: "Over the past seven years, we have watched the steady weakening of the nation's transportation system. Railroads are in distress. Highways are congested. Airports and airways lag far behind the needs of the jet age." They propose: (1) a national transportation policy (2) an expanded program of airport grants and river and harbor improvements (3) support of the Federal Highway Construction Act of 1956 and of 1958

and (4) federal assistance to railroads in meeting certain capital needs, particularly for urban transportation.

**Consumer Protection.** The Republicans point with pride to the strengthened Food and Drug Administration and promise continued strong support in "protecting consumers against harmful food, drugs, and cosmetics." The Democrats view with alarm a "weakened" FDA and promise funds and authority to strengthen it, as well as proposing "a consumer counsel . . . to speak for consumers in the formulation of government policies and to represent consumers in administrative proceedings."

**Research.** The Republican plank reads: "We believe the federal roles in research to be in the area of (1) basic research which industry can not reasonably be expected to pursue, and (2) applied research in fields of prime national concern such as national defense, exploration and use of space, public health, and bet-

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### THE MONTH IN WASHINGTON

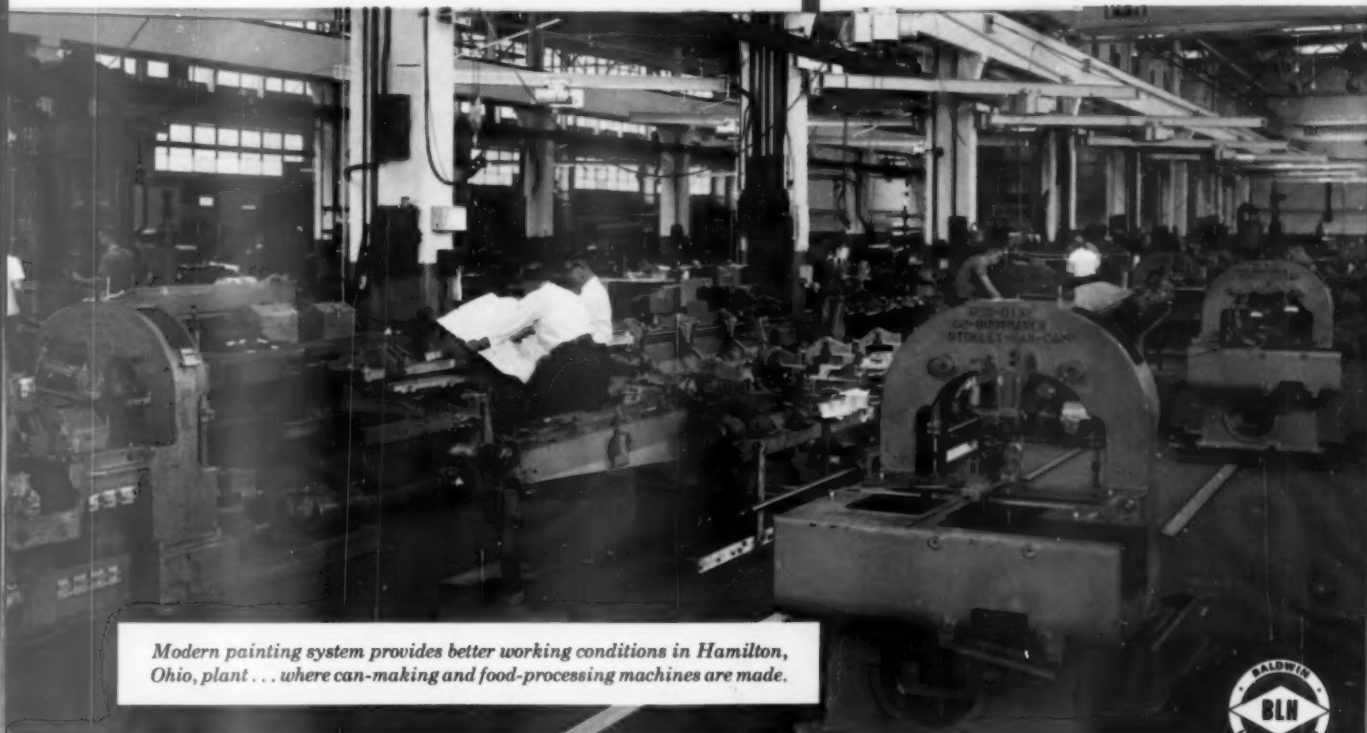
- Campaign platforms of both parties include measures dealing with a variety of safety problems.
- Bureau of Mines revises regulations on procedures for testing for permissibility and approving dust collectors for rock drilling.
- AEC announces that less than one per cent of fatalities in atomic energy industry involve radiation.
- Federal Aviation Agency announces several proposals for increased safety in flying.
- President proclaims week of October 9 as Fire Prevention Week.



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## USES PITTSBURGH COLOR DYNAMICS®

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The versatility and scope of the engineering skills of this organization are world-famous. Its Hamilton division includes plants which build heavy-duty Diesel engines, power transmissions for submarines, and components for atomic aircraft and guided missiles. Other plants build elephant-type and railroad shop ma-

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The plant shown, repainted according to COLOR DYNAMICS, produces can-making machinery and special automated equipment for food processors and packagers.

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### How you can get a modern color plan of your plant—FREE!

• We'll be glad to send you a free copy of our fully illustrated book on COLOR DYNAMICS for industry. It explains this modern painting system simply and clearly. Better still, we'll be glad to prepare a comprehensive color plan of your factory, without cost or obligation. Call your nearest Pittsburgh Plate Glass Company branch and arrange to have a representative see you. Or mail coupon at right.



**PITTSBURGH PLATE GLASS CO. PAINT DIV.**

Pittsburgh Plate Glass Co., Paint Div.,  
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B 7-12 D 6-12  
E 6-12

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## **Iron Age Steel Toe SAFETY SHOES**



(Fiction)

## THE DIARY OF A SAFETY ENGINEER

By BILL ANDREWS

Local agencies have shown commendable interest in creating a climate more favorable for safety on the job and throughout the community. Our Safety Engineer is now planning an attack on management's apathy

# HARD SELL

September 8, 1960

THE CAMPAIGN I mapped out last month for a multiple attack on community apathy toward safety is producing some stir and, perhaps, some results.

It has either produced results, or we have been lucky, or both.

Bert Harding, my junior safety engineer and himself a native of this area, is spending half his time this week visiting shop courses at nearby high schools, selling school shop safety, but getting in the best possible licks for the cause of industrial safety when these young fellows graduate and come to work on the project.

The county agent is tickled about the effect of his talks to farmers on farm safety—with some side digs about the behavior of the sons of farm families working on the project.

And our county visiting nurse is supporting the cause well in her home visits.

And we've had only one disabling injury in 30 days, and that was a sprained wrist costing two days' lost time.

I wish I was as sure that I was accomplishing anything with management.

I've always, I think, felt less sure of myself in the front offices, where the desks are mahogany and unlittered, where quiet secretaries stand by to do a man's work for him, where things happen by schedule, without noise, or sweat or—well, or blood.

I feel secure in my other two worlds. My own cubbyhole office with its wall chart, drawing board, and battered desk is a kind of home. What is in it is what I wanted and put in it. Here I can think and work at the trade I've learned. The engineering and chemical handbooks hold no surprises—only solid data to be searched out and put to work.

Then there is my other world, the world of the shop floor. I'm at home there, too, amid surroundings I understand, in a confusion that I can interpret. The floor is full of surprises, dramas, catastrophes—but I know it and can read it and live on it with assurance. This is the world, after all, which I have spent 25 years learning about.

I suppose I've also spent 20 of those years trying to understand management at the front office level. But these management men are still strangers to me, sometimes, and their world an alien world.

This last month I've been calling around, trying to alarm management men who haven't yet seen the evidence that underlies my alarm. Some of them have had no increase in accident rates. Others can dismiss them as minor fluctuations of no significance.

It is hard, I find, to convince a plant superintendent who moved here a year ago from industrial New Jersey that these midwestern farm and small-town kids newly recruited to industry are basically different from his fourth generation mill hands back in Newark. And it

is even harder to make the Harvard Business Administration graduate who produced a first-rate record in a Connecticut plant realize he shares with the New Jersey man a common problem based on local personnel factors.

I've tried. I've been eloquent. I've been statistical. I've been sociological. I've used scare approaches and sentimental approaches and hard-boiled practical approaches. But August was hot, and I produced more yawns in front offices than any other reaction.

Oh, not everywhere. The Lemmerton plant is running scared. Bill Malloy, their safety man and one of the few safety professionals working for individual concerns on the project, is still cherishing a perfect no-disabling-injury record since the plant opened, and he has managed to convey to his management both an enthusiasm for keeping the record clean and a real concern that the slump in employee morale throughout the project will, sooner or later, hit Lemmerton with disastrous results, unless something is done about the whole community relations situation.

So, they are lending a hand to try to convert some of the managers of other plants who have failed to respond to my arguments.

One trouble, I'm sure, is that so many of these front-office men have let themselves become insulated from the shop. If I could find a way to lure them out of their air-condi-

—To page 66



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The Bell System installer-repairman is well known for the good telephone service he brings his neighbors.

Not so well known, however, is the fact that if the need arises, he can serve his neighbors in another, vitally important way.

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Training in safety has always been an important Bell System asset. And, in times of emergency and disaster, so many people skilled in helping others can be a national asset.



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# AROUND THE COMPASS

## ACTIVITIES



## • PROGRAMS

## • EVENTS

By THOMAS J. NOLAN

Field Service Department, NSC

### Water Safety Promoted

The July issue of the Jefferson County (Watertown, N. Y.) Safety Council's *Newsletter* included an article on water safety and learning to swim. The article stated that Jefferson County with its many lakes, farm ponds, and rivers presents a great need for teaching water and boating safety. One way to prevent drownings is to encourage everyone to learn to swim. Such instruction is being given in Watertown at the municipal pools and at the YMCA and YWCA. In the villages and rural communities, the article continues, service clubs and other volunteer organizations could render a great service were they to sponsor and supervise local swimming classes, using available nearby swimming locations during the summer months. The article concluded with a statement urging civic leaders throughout the county to initiate Learn to Swim programs in their communities.

The council has recently sent a letter to presidents of local safety councils in Wisconsin promoting the new NSC film "Safety Everywhere—All The Time." The Wisconsin council offered the use of one of their copies of the film for preview on a no-charge basis, and local councils were urged to use the film as a basis for a program throughout the year.

To provide assistance to various groups throughout the state, the council recently published the Fourth Edition of *Safety Speakers*. This publication lists various speakers available, indicates the home address of the speaker, and subjects normally handled by each speaker.

### Committee for On-the-Job And Off-the-Job Programs

The *Bulletin* of the Springfield-Greene County (Mo.) Safety Council featured an article on the formation of an industrial committee. The article was headlined on Page 1 of the first edition of the *Bulletin*.

The committee, which will deal with on-the-job and off-the-job safety programs, is made up of representatives from many of the city's industrial firms. Among the objectives of the group, outlined by Eldon Jones, a director of the council, were: a survey of accident records, a technical library, an area-wide industrial safety conference, and an off-the-job safety program.

### Wisconsin Council Activities and Projects

The Wisconsin Council of Safety recently held a General Traffic Safety Committee meeting. The meeting brought together key representatives of 21 state associations. The objectives of the council were represented to the committee. The purpose of the meeting was to assist the council in carrying out its objectives in the area of traffic safety.

Each committee member, working with other members, is in a good position to keep his own organization well informed on what is needed and what is being done in traffic safety in Wisconsin.

### Safety Center Assistant Director Named

Appointment of Bruce B. Madsen as assistant director for field services of Michigan State University.

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*"Everything for Industrial Safety"*





ty's Highway Traffic Safety Center has been announced by Gordon H. Sheeche, Center director. Madsen will assume the field services responsibilities relinquished by J. Carl McMonagle, an assistant director of the Center, who will be enabled to enlarge his engineering activities.

Madsen, formerly of Salt Lake City, Utah, joined the Center's field services staff in 1957 after graduation from Michigan State University. He was the nation's first graduate in highway traffic administration.

#### Air Safety Featured at Dinner

Dr. Hedio S. Kuhn, M.D., chairman of the Hammond (Ind.) Safety Council, reports a fresh angle of safety was interjected at the council's recent Annual Testimonial Dinner. The subject of the principal speaker, Capt. Harry Orlady of United Air Lines, was air safety. The speaker and his subject were well received by the more than 300 persons attending.

The dinner is an annual fund-raising event and also serves a dual purpose by presenting an opportunity for presentation of awards by the council and the Citizen's Safety Committee to groups and individuals for outstanding work in accident prevention.

#### Northwestern Traffic Institute Schedule

The Northwestern University Traffic Institute at Evanston, Ill., has recently published a calendar of their training program for September 1960 to December 1961.

The program includes unit courses for police, specialized traffic courses, traffic conferences, and the nine-month course in traffic police administration program.

Some of the courses in administration and techniques scheduled for this year are:

1. Accident Investigation, September 12-30.
2. Supervision of Police Personnel, October 3-21.
3. Traffic Law Enforcement, October 24-November 11.

Additional information, including a course schedule, may be obtained by writing the director at 1804 Hinman Avenue, Evanston, Ill.

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TO SNEER  
AT...**



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## Sanitation's Objectives

Seven steps by which industry can achieve a clean, orderly and healthful working environment



By **ALBERT J. BURNER**

Supervisor of Cleaning Standards  
The Port of New York Authority

**INDUSTRY'S OBJECTIVE** in an organized sanitation program is to provide for its employees and other persons using its facilities, services, or products, a clean, orderly, and healthful environment.

**Clean**, in the above definition, means the absence of serious soil accumulations from equipment and structural surfaces and environmental air.

**Orderliness** implies physical control of equipment, tools, and materials, and waste, so as to provide

for the safe and efficient movement of individuals working in or using the premises.

**Healthful**, used here in its broadest sense, includes the commonly recognized and accepted demands of human comfort in addition to the more obvious health requirements.

In attaining these objectives, how can management:

1. Deal effectively with maintenance of the work environment?
2. Relieve production and mechanical maintenance of tasks and responsibilities which are outside their areas of competence?
3. Secure efficiency through selection and use of proper methods, material, and equipment?
4. Plan systematic maintenance and gear it to plant needs?
5. Train and supervise maintenance labor?
6. Exercise surveillance over other

departments, materials, and products as to significant sanitation factors?

7. Maintain records of use of labor and materials as the basis for cost control?

**1. How can management deal effectively with maintenance of the work environment?**

Maintenance of the environment can be effective only when control is even and continuous. This can be achieved if management has attained to a considerable degree a number of intermediate objectives which have to do with the continuity and unity of sanitation effort. These are:

- a. A technically qualified system of establishing standard sanitation methods, supplemented by a knowledgeable procedure for approving materials and equipment. These considerations are interdependent and one cannot exist for long without the other.

This article has been adapted from a paper presented at a seminar on Organizing and Managing an Industrial Sanitation Program conducted by the American Management Association, New York, March 30-April 1, 1960.

b. Equitable and efficient allocation of the work load, based on appreciation of the time required for the performance of sanitation tasks and formalized to an extent where it can be sold to the workers, and examined and re-examined by management when necessary.

c. Supervision, adequate in quality and quantity to the demands of training and follow-up.

d. A tangible system for evaluating work performance, establishing appearance standards, and measuring current appearance levels.

Institution and administration of the above controls presupposes that management has provided adequate skill at the standard-setting and administrative level. The detail involved in the provision and organization of these controls, the technical knowledge necessary in many instances, and the resourcefulness required in a field where precedent often does not exist, pre-

clude that management can haphazardly delegate the development, institution, and administration of these devices to untrained, unspecialized, and thus uninterested, personnel.

As we discuss these controls in detail, it becomes increasingly apparent that the catalyst which makes the whole program work is the provision of interest and knowledge at the standard-setting and administrative level.

## 2. How can management relieve production and mechanical maintenance of responsibilities outside their areas of competence?

Such conditions exist only where there has been an adequate delineation of work, or, perhaps, where the cleaning function has been subordinated to an extent where it has received little attention. There should, of course, be a division of responsibility in any sizable organization which establishes the clean-

ing function as a distinct operation, separate from mechanical maintenance and production, and having its own budgeting, cost reporting, and cost accountability.

There are situations where cleaning work, say the interior cleaning of a cooking vessel or fermentation chamber, are an integral part of the production operation. In such instances management can have the function performed by production labor. However, the operation should be defined as a production operation, supervised as a production operation, and its cost charged to production.

Should management find it expedient to clean these vessels with lower paid sanitation labor, the task becomes a sanitation job, directed by sanitation supervision, and chargeable to the sanitation account. Management can allocate the work as expediency dictates but the responsibility, accountability, and

—To page 117

## A SANITATION RATING FORM—AND HOW TO USE IT

### THE CITY OF NEW YORK AUTHORITY FACILITY SANITATION RATING FORM

FACILITY		BUILDING		DATE		OVERALL LEVEL		
AREA						CLEANLINESS LEVEL		
ELEMENTS		CONSIDERATIONS						Total Score
FLOORS		CLEANLINESS		ORDER		REPAIR AND FINISH		
		POSSIBLE SCORE 20		POSSIBLE SCORE 10		POSSIBLE SCORE 10		
		Excellent 20 19 18		Excellent 10 9		Excellent 10 9		40
		Good 17 16 15		Good 8 7		Good 8 7		
		Fair 14 13 12 11 10		Fair 6 5		Fair 6 5		
		Poor 9 8 7 6 5		Poor 4 3 2		Poor 4 3 2		
		Very Poor 4 3 2 1 0		Very Poor 1 0		Very Poor 1 0		
EQUIPMENT		POSSIBLE SCORE 12		POSSIBLE SCORE 4		POSSIBLE SCORE 8		
Furniture		Excellent 12 11		Excellent 4		Excellent 8		24
Ticket Counters		Good 10 9		Good 3		Good 7 6		
Said Units		Fair 8 7 6		Fair 2		Fair 6 4		
Drinking Fountains		Poor 5 4 3		Poor 1		Poor 3 2		
Baggage Counters		Very Poor 2 1 0		Very Poor 0		Very Poor 1 0		
WALLS		POSSIBLE SCORE 10		POSSIBLE SCORE 1		POSSIBLE SCORE 5		
Doors		Excellent 10 9		Excellent 1		Excellent 5		16
Transoms		Good 8 7		Good 1		Good 4		
Pillars		Fair 6 5		Fair .5		Fair 3		
etc.		Poor 4 3 2		Poor 0		Poor 2		
		Very Poor 1 0		Very Poor 0		Very Poor 1 0		
CEILINGS		POSSIBLE SCORE 5		NOT RATED		POSSIBLE SCORE 3		
Egg Crates		Excellent 5				Excellent 3		8
		Good 4				Good 2		
		Fair 3				Fair 1		
		Poor 2				Poor 0		
		Very Poor 1 0				Very Poor 0		
WINDOWS		POSSIBLE SCORE 4		POSSIBLE SCORE 1		POSSIBLE SCORE 2		
Framework		Excellent 4		Excellent 1		Excellent 2		7
Sills		Good 3		Good 1		Good 1		
Ventian Blinds		Fair 2		Fair .5		Fair 1		
		Poor 1		Poor .3		Poor 0		
		Very Poor 0		Very Poor 0		Very Poor 0		
LIGHTING FIXTURES		POSSIBLE SCORE 3		NOT RATED		POSSIBLE SCORE 2		
		Excellent 3				Excellent 2		6
		Good 2				Good 1		
		Fair 1				Fair 1		
		Poor 0				Poor 0		
		Very Poor 0				Very Poor 0		

(% = Cleanliness Level). Cleanliness Standard should be at least lowest degree of "Good" (40) divided by 54 (40/54 = 74%).

COMMENTS:

RATED BY: WEATHER CONDITION: DATE: TIME:

### INSTRUCTIONS

This form is a tool to be used for measuring the level of sanitation of any facility area. The area is broken down into its elements, i.e., floors, equipment, walls, ceilings, windows, and lighting fixtures. Each of these elements is considered from three different viewpoints: cleanliness, order, and repair and finish. The number indicated as the possible score represents the optimum unit environment with respect to this specific consideration. Some examples of conditions which detract from the optimum rating are:

Cleanliness	Order	Repair and Finish
1. Dust	1. Out of place	1. Hygus
2. Spots	2. Unclear aiseways	2. Leaks
3. Tarnish	3. Slippery	3. Spoilings
4. Dirt	4. Crowded	4. Stains
5. Insect infested	5. Disarranged	5. Peeling

### RATING SCALE

The rating circles the number corresponding to the sanitation level believed to have been achieved. The rating scale is as follows:

#### Excellent:

A condition indicating continuous care and attention, and approximately the initial condition at the time of installation.

#### Good:

A condition indicating care and attention, though improvements may be made.

#### Fair:

A condition indicating laxity, but which can be corrected without much effort.

#### Poor:

A condition indicating neglect over a comparatively short time, but which can be corrected without much effort.

#### Very Poor:

A condition indicating complete neglect over a long period.

### WEIGHTS

The weights used in this form are based primarily on two factors: first, the average amount of time that a facility ordinarily spends for the cleaning and maintenance of the various elements, such as, floors, ceilings, windows, walls, equipment, and lighting fixtures; and second, the importance of the element to the sanitation program as far as operations, safety, health, and esthetics are concerned.



# Big Buildings Are Her Beat

After 30 years of industrial nursing, "Buffy" Rottmayer says construction first aid nursing is the field for her. Here's her story

By BOB DORSETT

"CONSTRUCTION NURSING is a four-part course in independence, decision-making, change, and challenge," Mrs. Margretta "Buffy" Rottmayer says.

Thirty years ago she started her career as a visiting nurse, working on a fairly rigid schedule in complicated organizations and among medical and industrial personnel.

Eight months ago, she became the only nurse on construction of the 20-story, \$20-million Hartford Fire Insurance Company Group Building near Chicago's Loop.

Left, Buffy examines welder's eyes for possible flash burn. Note the curbing at floor level, which serves as protective guard.



Above, Buffy bandages hand of injured supervisor during one of her frequent tours of building site. She finds her first aid kit has helped in situations like this more than once. Left, Buffy takes a look through a surveyor's transit. Her job is not all work, and she finds this type of friendship pays off in personal relationships that help her give better medical treatment, if need occurs.



This vocational vaccination has built up Buffy's enthusiasm for this segment of her field, in comparison with conventional industrial nursing.

"Here, everywhere I go there's stimulating variety," she says. "For instance, different trades are employed for the various phases of construction. This hampers development of a set plan for a safe working environment or promotion of standardized safety programs."

These constantly changing groups make it nearly impossible for her to become good friends with individual workers, preventing the type of personal in-plant medical service found in industry.

Another complexity stems from the lack of requirements for construction men to have a physical examination as a *must* for a job. If a man is hurt, there's usually no previous medical history for him on which to base the most effective treatment. In fact, if no pre-employment examination report is on hand, it's difficult to know what type of trouble to expect from employees who are impaired but legally permitted to work.

These are a few ways Buffy has found construction nursing different from her past three decades of experience. But current work has alerted her to one particular advantage. With changing phases of building come specialists... and accompanying them are certain kinds of injuries—possibilities she can prepare for.

Form men usually suffer punctures and splinters... Burns and flash injuries harass iron workers and welders... Carpenters have rashes of contusions, punctures, and splinters...

Laborers are plagued by crushed feet, sprained backs, and muscular ailments...

And so on. Foreknowledge of such cycles gives Buffy a head start in taking proper precautions.

Technically, she provides medical first aid on this job for George A. Fuller Company, the builders, as a representative of the Hartford organization, the owner and insurer. And before the 2½-year completion span goes by, she'll have scanned with a competent medical eye at least 400 workers and their 50 supervisors.

So Buffy has developed a long-term approach, formed around her own professional philosophy. She recommends these techniques to other nurses in the construction field.

Priority goes to the maintenance of accurate, descriptive, impartial records as a complete history of every injury that occurs. "This is important where the permanent presence of a doctor on the site is not warranted," Buffy maintains.

Another primary duty is her habit of touring the project to "be seen" there at least two or three times daily. Buffy hikes through the area to see first-hand what's going on. And she's no sissy when talking with foremen about hazards she turns up.

"A construction nurse takes an active part in safety or sanitation programs," she insists. "Help comes from many people other than medical personnel. I've already worked with foremen, contractors, subcontractors, and building representatives, as well as safety engineers."

Buffy urges construction nurses to seek membership in local and national nursing organizations. She believes this will keep them up with developments in industrial nursing and law. To show she puts her theories to work, Buffy has a personal up-dating program. "One 17-month study in



Above, a sign to the wise is sufficient, and this one lets new workers know how management feels about safety. Below, employees must get in touch with Buffy soon after injury or have a good excuse.



Below, this mighty mite sign does its part of the safety job in many locations throughout the project.



To Foreman: \_\_\_\_\_

Time in Dept: \_\_\_\_\_

Time out: \_\_\_\_\_

To return: \_\_\_\_\_

First Aid Nurse: \_\_\_\_\_

Above, this time slip keeps workers from taking too long for treatment, helps foremen keep tabs on their crews. Below, this slip must have Buffy's and physician's OK before disabled man can return to his job on site.

DATE .....

TO: *Larson*

It is the opinion of *Dr. Cooper & Weber*

Employee *John Doe*

May return to work. Date: .....

*Buffy Blum*

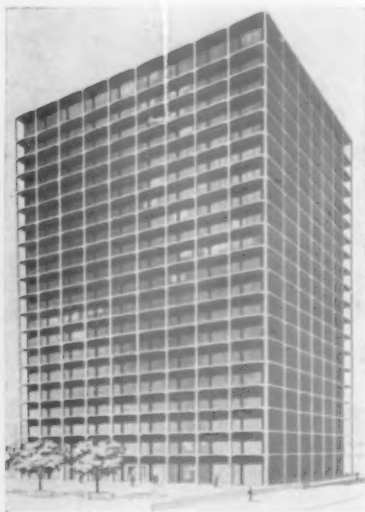
FIRST AID UNIT  
325 W. Monroe St.

Dr. Cooper & Weber

MONTH: July

	Mon	Tue	Wed	Thurs	Fri	Sat	Sun	Mon	Tue	Wed	Thurs	Fri	Sat	Sun	Mon	Tue	Wed	Thurs	Fri	Sat	Sun	Mon	Tue	Wed	Thurs	Fri	Sat	Sun	Total
Dr. Stonehill																													
Corbett Clides																													
Temperature	67	75	65	68	72	8	8	73	64	72	80	8	67	8	72	80	69	8	66	75	68	68	8						
Workmen	171	158	164	244	13	126	11	111	106	102	53	91	100	213	108	217	171	228	232	238	226	212	230	224	112				
Lost Time																													
Spitters																													
Lacerations																													
Sprains																													
Contusions																													
Abrasions																													
Punctures																													
Foreign body-eyes																													
Eye Flashers																													
Redressing																													
Burns																													
Ret. to work																													
Rest Prostration																													
Heat Fatigue																													
Colder medical																													
Ambulance																													
Telephone calls																													
Total																													126

Monthly statistical summary provides background for medical plans.



Above is an artist's conception of the finished 20-story, \$20-million Hartford Fire Insurance Company Group building. Below, half-finished, these 11 floors and the 9 unfinished levels will be covered with aluminum, glass, and concrete.



X-ray has come in handy. A year in lab procedures and courses in hearing and audio-testing are useful."

"By the way," she said, "we do have a first-aid station—though not an elaborate one." It's right in the middle of the building's first floor. Equipment is aimed at efficient first-aid—diathermy, portable oxygen, splints, stretchers, a selection of analgesics, burn medications, anti-infection drugs, and the like.

"Our biggest problem is infection," Buffy says. "I think tetanus toxoid shots should be given to all construction workers. Sixty per cent of the disabling injuries here happen to men who don't report immediately to our first-aid setup. When they finally get worried, and let us know, they're in trouble."

Buffy has devised her own report forms, too. She keeps a log which in detail might rival an accountant's notebook. In it she itemizes medical information gained by interviewing each disabled worker as though he were applying for a loan.

Her "time slip" restrains employees from taking too long for first-aid treatment, or going back to the job without Buffy's medical OK. Through this means, foremen on the site can also keep closer tabs on their crews.

If an employee has an injury that limits him to his home or a hospital, he must offer a Rottmayer form for her approval and that of a visiting physician before returning to work. This stops "eager beavers" from easing back to the job without being medically fit to return.

And Buffy records a monthly statistical summary on the frequency of certain types of accidents. This file will serve as background for future medical preparations.

Creating and maintaining records is part of Buffy's own history. In her contacts with industrial and business operations, she has organized visiting nurse systems for Aldens Inc. and the Campbell Soup Company branch in Chicago.

"It's a long way from my training in the Windy City's Evangelical Hospital," Buffy says. "But from now on, I'm making the big buildings my beat."



# news briefs

## **Trace of naphtha**

Before tracing paper was invented, early printers made opaque sheets of paper transparent for copying purposes by soaking the sheets in naphtha. When the naphtha dried, the sheets became opaque again. Apparently, enough printers survived to transmit the knowledge of the trade to our own generation.

## **Bomber blasted**

An employee who exploded a cherry bomb in the locker room of a plant was discharged for his prank. The discharge was made under the contract rule which read: "Horseplay of a type which endangers the health or safety of other employees is just cause for discharge." Another employee, who was eating his lunch in the locker room, required hospitalization and medical care for an eye injury caused by the explosion. When the case went to arbitration, the arbitrator upheld the company's action.

## **Cooperation works here**

The Goodyear Tire and Rubber Company, Akron, Ohio, has a joint management-labor committee that discusses safety problems. Union members of the committee can call in state inspectors if they choose. When a new process caused a health problem, the committee recommended changes that cleared up the situation.

## **Corrosive dust corralled**

Complaints from employees and neighbors about corrosive dust were stopped by a plant that changed to a pneumatic conveyor system. With the old system, boxcars were unloaded by a bucket loader. With the new system, hopper cars are used and the material is drawn to the storage area by vacuum. The new system saves material and is faster than the old.

## **Safety bingo**

A bingo card was sent out with each copy of the company publication at the Lehigh Structural Steel Company of Allentown, Penn. The employee's name and a list of safety slogans were printed on the back of each card. One of the slogans was

chosen as the slogan of the day for the duration of this safety stunt. If the number of the slogan appeared on the card, the employee playing the game circled it. The first employee able to fill a line on the card won a bond. A larger bond was given to the first employee whose numbers formed a cross to represent the Green Cross for Safety.

## **Tank welded outdoors**

When the Clinton Corn Processing Company of Clinton, Iowa, erected a 40-ton oil extractor, they decided to do the welding outside. Processes inside were using hexane, and management wanted no welding torches operating near the explosive fumes. Parts were assembled outdoors on a foundation built of old oil drums filled with concrete. When the job was completed, the unit was lowered onto dollies and winched into the plant through a hole in the wall.

## **Even before 1984?**

Closed circuit television will be used more and more to watch employees in dangerous areas, for plant security, testing of dangerous products or products in dangerous areas, and in air pollution control.

## **High work eliminated**

Maintenance men don't need ladders or scaffolds for painting at Rocketdyne Division of North American Aviation. Pole spray guns from four to sixteen feet long take care of the high painting jobs. The painter no longer needs masking or dropcloths. The cleanup problem caused by overspray has been greatly simplified.

## **Portable drill towers**

Tubular steel scaffolding of the type used in the construction trades is being used to build portable fire drill towers. The equipment is reported to be economical to use, is rigid in construction, easy to assemble and dismantle, is versatile, safe, and widely available. The parts can be put together without tools to build towers of any height with platforms, offsets, setbacks, and other required design details.

*Jim Saul*



# Safety Got a Shot, Too

Important side effects followed  
a tetanus immunization program

By JAMES K. SKIPTON

Supervisor of Safety, W-K-M Division of  
ACF Industries, Inc., Missouri City, Tex.

A TETANUS immunization program was, in the vernacular of the race track, the start of a parlay resulting in more than 1,500,000 safe man-hours of work and the National Safety Council's Award of Honor for W-K-M Division of ACF Industries, Inc., at Missouri City, Tex.

In 1956, W-K-M, an old Houston concern, was merged under one roof with two other firms, one from Missouri and one from Michigan. All three had safety programs, and, like mixing three different paints to obtain a uniform color effect, the safety standards and practices of the three combined organizations also required mixing.

At the outset, management realized that the responsibility must rest with supervision and that the cooperation of each employee must be enlisted. How to get that cooperation was the question.

A suggestion by our plant doctor proved to be the key that opened the door.

The biggest hazard of W-K-M's machine shop operations was cuts from shavings and embedded metal particles. A tetanus toxoid immunization program had medical benefits and therefore offered a natural springboard for a safety program. Also, the plant had been built on land previously used for ranching and farming, where the tetanus organism would be abundant in soil and animal feces. Of even more importance was the fact that many employees lived on ranch and farm land where protection from lock-

jaw was of vital concern, particularly as tetanus more commonly occurs in warm climates.

An educational program on the dangers of tetanus, and its 40 to 80 per cent mortality rate, was started, and the advantages, both on and off the job, of tetanus toxoid immunization were outlined. It was stressed that in the event a person did not have the immunization, it was necessary for a physician to consider giving tetanus antitoxin with the person being checked first for sensitivity to the serum. Ten per cent of all persons inoculated with tetanus antitoxin develop some type of allergy to the serum. It was explained that reactions to tetanus antitoxin could be severe and that reactions to tetanus toxoid were extremely low and mild.

## Voluntary Participation

The program was presented to employees on a voluntary basis and under the supervision of the plant doctor. We were fortunate to have a nurse on each of the three shifts who handled the shots. Those who had been in the armed services or had previous immunization required only a booster shot of ½ cc of tetanus toxoid fluid. Those who had no previous protection were given two ½ cc injections of tetanus toxoid aluminum phosphate—absorbed, four to six weeks apart. About 70 per cent of the employees had the series and 30 per cent the boosters.

The program was directed mainly to some 770 shop employees, super-

A record of each department's participation was kept on this board. Jim Skipton, safety supervisor, points to the first department with 100 per cent participation.





who were trained instructors in the methods of first aid and lifesaving conducted the classes. Every person who attended the program and who met the requirements as set forth by the American Red Cross received a certificate for completing the standard first aid course.

Next step in a program of participation was an old and tried slogan "A clean plant is a safe plant." Employees took it upon themselves to keep the plant as clean as the day it opened. Monthly awards, determined by plant inspection committees, were presented to the department with the most points for the cleanliness and orderliness of its area. Accident records of each department were also considered in arriving at contest standings.

These awards consisted of a plaque presented to the winning department by a member of management and several individual awards of first aid kits and small fire extinguishers. To stimulate further interest in the program, a large board which showed the standings of each department was erected near the first aid office. The competitive spirit among the departments went a long way toward improving housekeeping and fostering an active interest in safety.

Some means of calling attention to the number of safe work days was needed. Since W-K-M makes valves, it was decided to build a wooden model 11 ft. high to use as the background for a safety thermometer.

The rising stem principle of the valve afforded a good opportunity to use a glass tube containing a colored liquid. It could be raised and lowered by means of a hand pump to show man-hours worked on a graduated scale the height of the valve. As the man-hours rose, so did the liquid. R. O. Wynn, vice-president—engineering and research, remarked during the unveiling, "Let's hope this record grows so we'll have to cut a hole in the roof to install a longer tube."

Rather than go through the roof, it soon became necessary to compress the man-hour markings on the tube on two occasions. The record reached 1,579,079 man-hours before it was broken.

The thermometer serves as a constant reminder that one disabling injury would ruin the record. As a result, every employee has become increasingly conscious of his part.

When the number of safe man-hours reached 500,000, a special pass case, suitably inscribed, was presented to every employee. An engraved pocket knife was also given to employees on reaching the one million milestone.

When W-K-M's parent company, ACF Industries, began its new Five-Point Safety Program, W-K-M climbed aboard the bandwagon and proceeded to indoctrinate every employee in the five ways to prevent accidents. Special group meetings were set up by foremen and supervisors with employees in their de-



A safety thermometer in the shape of a 20-in. W-K-M gate valve records the number of man-hours worked without a disabling injury. The plant's safety temperature climbed to over 1,500,000.

partments. After the presentation, employees were invited to enter into the discussion, offer suggestions, and participate in question and answer sessions.

The supervisors came in for much concentrated attention. The essentials of accident prevention and the progressive techniques of on-the-job safety were introduced to the foremen in another series of class instruction. One of the main objectives of the course was to stress management's concern in the safety program and to emphasize the foreman's responsibility in the prevention of accidents in his department. The course provided a common understanding of how to apply corrective and preventive measures. During the period in which the foremen participated in the course,

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Better housekeeping was one of the results of interest generated by the tetanus toxoid immunization program. This scoreboard recorded monthly standings of various departments in the award competition.

# How to handle a

# BIG LIQUOR PROBLEM

The Indians didn't call it "firewater" just because it made their tonsils tingle pleasantly. They always burned a few drops to see if the palefaces were cheating them with a watered product. The hot blue flame was the "proof." This distiller knows the product will burn, and takes elaborate steps not to demonstrate the fact.

Approved fire alarm and lock-in signal.



STORING more than a million barrels of whiskey, while it ages in white oak barrels, causes fire prevention and control problems most of us would never dream of. Also, the NFPA code defines the situation as extra hazardous when not properly controlled.

Even so, a thorough look at the fire prevention setup at the Peoria, Ill., distillery of Hiram Walker & Sons, Inc., shows fire has a poor chance of starting, and an even poorer chance of burning long enough to do serious damage.

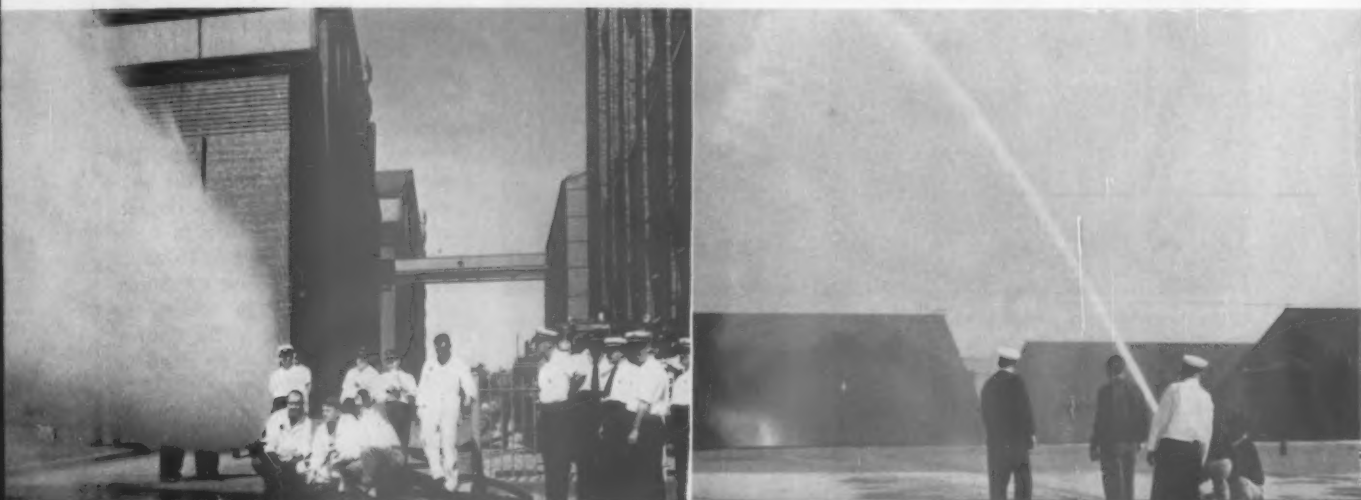
The assignment to make and keep the distillery safe has been given to

the Safety and Plant Protection Department, headed by Manager James H. Snyder and a crack crew of men. And here's some insight on how they fulfill this obligation.

Every building on the main 37-acre site is of fire-resistant construction. The rack warehouses are built in "cells" that provide a reinforced concrete floor every sixth tier of barrels. Fire walls are all Underwriters' Laboratories approved.

The heated warehouses allow use of wet pipe sprinklers; no soda-acid or foam extinguishers are used. Carbon dioxide and pressurized

Local fire fighters watch while volunteers test equipment. Flat roof of No. 12 warehouse makes a good hose platform.





Maintenance men with shop-built hose clamp and hose holder.

water extinguishers are used in the plant and dry powder on motor vehicles and tank farms. Large wheeled chemical extinguishers are used by the company's volunteer fire department.

At Hiram Walker, the safety and fire protection function is a part of production, not a sideline activity. There is no safety committee, as such, but safety personnel have an important place on production committees. This gets fast action. Hiram Walker safety men believe the company has a responsibility to act immediately on hazards, and the company in turn gives them

responsibility and authority. They use this authority within reason, and are accountable later for their actions—a sound management procedure.

Through consistent communications, Hiram Walker employees have come to regard fire and accidents as threats to their pay checks. They are thus very conscious of the importance of fire prevention. A chemist, for example, will check with the safety department before he sets up an apparatus using a flammable solvent.

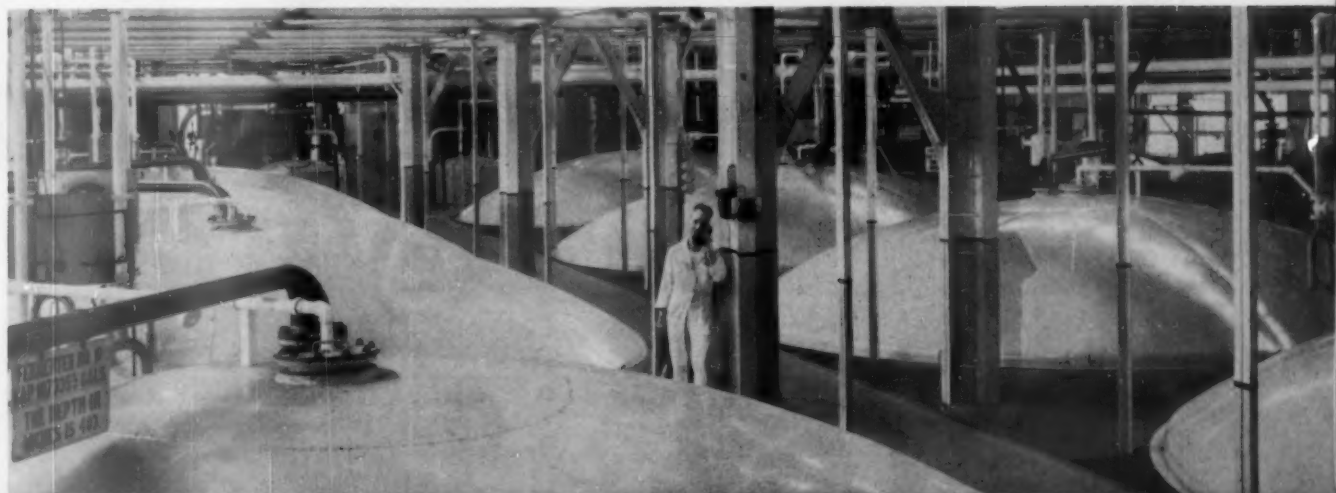
Believing that any relaxation

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Volunteers put stream on warehouse roof.



Fermenter room has all electrical equipment, even telephones, of approved type.



Maintenance man Charlie Haetler had come off the big ladder many times . . . but now he was on his hands and knees, groping for the water hose . . . he was blind

"I MANAGED to get down off the ladder. My eyes were filled with ammonia. I crawled on my hands and knees to where I thought the water hose would be. I couldn't see, and I had to be sure that I didn't turn on the steam tap by mistake."

That's how Charles W. Haetler describes the first terrible moments of his blindness. The moments when his whole world had changed, when each second seemed to be tolling away his most precious gift—eyesight.

Charlie Haetler already had 30 years of experience as a maintenance mechanic when he joined Sealtest Baltimore in 1946. Since that time he has been a member of the maintenance department, dividing his time between the milk plant on Linden Avenue and the nearby bread plant. He had never had a serious accident while working. Then came the day of June 2, 1959.

The maintenance crew had a tough assignment. An ammonia pipe had burst in the ice tank, filling the ammonia lines in the milk plant with sludge. As a result, all coolers had to be drained of ammonia, and the sludge cleaned out. On June 2, Charlie was working on the cooler in the milk storage room. He mounted an 8-ft. ladder and opened the flange on the ammonia pipe. The raw ammonia, many times stronger than household solutions, drained out. Charlie started down the ladder to get the tools necessary to remove the sludge.

"Ten Days of Blindness" has been reprinted in the National Safety News through the courtesy of the editors of Sealtest Eastern News, where the story first was published in December 1959.

But somehow, some ammonia had remained in the pipe. As he descended the ladder, Charlie was for a split second at eye level with the open flange. In that instant, the remaining ammonia gushed out, splashing squarely in Charlie's eyes.

It is a mark of Charlie's courage and cool-headedness that he was able to locate the water hose while his sightless eyes burned with pain. He found the right valve, turned it on, and sprayed his eyes with water. With much of the ammonia washed out, the stricken mechanic could distinguish light and dark shapes.

He made his way across the load-out yard and up a flight of stairs to the maintenance shop. There, supervisor Allen Alban and mechanic Woodrow Richter, unaware until that moment that the accident had occurred, administered first aid in the form of eye salve. Then Charlie was rushed to Baltimore's Mercy Hospital.

For the next 10 days, Charlie Haetler lay in a hospital bed, wondering whether he would ever see again . . . wondering whether the

last time he had seen his family and friends and the familiar scenes of a lifetime had indeed been the last time. And Ida Haetler, his wife of 34 years, and their three married children all waited . . . and hoped.

During that 10 days, two operations were performed on Charlie to remove adhesions on his eyes. Every two hours, around the clock, salves and drops were applied. At those times, Charlie could see—light and dark. The rest of the day he lay with a mask on his face . . . a mask to hold in place the two bandages that covered his eyes.

At the end of the 10 days, his doctors told Charlie he would see again. The water he had sprayed in his eyes immediately after the accident occurred had saved his vision. Charlie remained in Mercy Hospital for 13 more days, while his sight gradually returned. The bandages were removed and he wore dark sunglasses.

Then the sunglasses were discarded in favor of a green eyeshade and a new pair of prescription eyeglasses. On July 6 Charlie went back to work, a man almost miraculously returned from the dark and shapeless world of the blind.

Today, Sealtest people who work around ammonia wear safety goggles, the result of a lesson painfully learned. To those who feel the goggles aren't always necessary, Charlie has a brief recommendation: "Put them on." And then, remembering those 10 days of blindness, he adds simply, "I know I always will."

## Ten Days of





# BLINDNESS



Toledo OnIzed Club's Safety Committee member inspects amusement ride. Minor weld is being made on wheel truck of miniature locomotive prior to outing.

This is the story of a firm that went the "extra mile" in helping its employees enjoy and return from the yearly picnic

## The Company That Cared

THE ANNUAL OUTING for its general offices staff is primarily a safety project to Owens-Illinois officialdom in Toledo, although the event operates around a "family have fun" recreational theme.

This year more than 2,100 company workers and their relatives and friends drove up to Cedar Point, a sprawling midwestern Tivoli 65 miles east of Toledo on Lake Erie, for a two-day picnic.

Thorough safety engineering and foresight brought these fun-seekers back to their jobs and homes unhampered except for minor ailments—sunburn, aches, and bruises.

Behind this vacation week end lay seven months' planning and more than several hundred man-hours of personal investigation by 10 men—five members of the Cedar Point

management and five O-I safety men, supervised by H. V. "Red" Gardner, corporate safety director of the firm.

Together, this joint committee went over the peninsular playground's insurance inspection records and covered a range of safety interests from beach and swimming controls, amusement rides, food handling and preparation to traffic safety, first aid and emergency medical facilities, police and fire protection, and the adequacy of local building codes.

"We find this 'extra mile' concern for employee welfare bouncing back. In fact, it's refreshing our own professional safety attitudes," Mel Byers, O-I employee services supervisor, said. "And this approach to company recreation is being re-

flected in the safety awareness of our workers and Cedar Point's management."

A crash campaign to gain the attention of employees actually started three months before the picnic, with a systematic barrage of leaflets, bulletin board displays, desk pieces, and instructional literature on recreational, health, and driving hazards.

The company's safety committee, working closely with members of the firm's OnIzed Club, emphasized the fun side of the outing. This balanced outlook put the week end in perspective and produced a large turnout.

One offshoot of such concentrated vacation safety promotion involved sale of a package containing

two highway flares and a first-aid kit. Ordinarily, pushing this product might have met with resistance, but the campaign placed 3,000 of these units in the glove compartments of car-owning workers.

This type of planning geared the picnic to smooth, safe movement. For instance, here are several precautionary "extras" provided by O-I at the picnic site:

The OnIzed Club established a trained first-aid team and an ambulance equipped with oxygen and resuscitator equipment for emergencies.

Company nurses were available, and a nurse was on duty at the Cedar Point First Aid Center, with medical facilities on hand in the Breakers Hotel.

The firm's safety committee purchased \$150 worth of home and car fire extinguishers for prizes in Bingo games.

Special banners and ash can

safety instructions were posted, and qualified inspectors examined amusement rides—repaired to O-I specifications—immediately before the outing.

The company made sure that experts looked over the luncheon on the morning of the picnic and arranged to have several hundred pounds of ice brought in to cool food below the contamination point.

These were things O-I did above and beyond Cedar Point facilities, already considered adequate by most resort standards. To check established conditions and come up with these suggested procedures, the O-I safety quintet made three trips (and drove about 400 miles) to investigate the safety setup.

These five men included Gardner; Byers; Paul Milholland, picnic chairman; Rex Keener, picnic co-chairman, and Walter Ellenberger, safety and health picnic chairman. Working with them were Cedar

Point's chief of police, Sandusky's chief of police, the sheriff of Erie County, and the manager and board president of Cedar Point.

The resort's management got well into the act through purchase of six special safety signs at an estimated total cost of \$600. Each sign says: "Management of Cedar Point is mindful of your safety, your health, your welfare! Special attention is given water safety, the beach, amusements, foods and food handling, and all facilities and operations of the resort!" These signs now are a permanent part of the Point safety establishment.

Selection of the area for the company's outing originally depended upon a predetermined code of safety and health regulations, suggested by O-I and approved by Cedar Point. And certain facilities added heavily in the choice of this particular site.

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Above, Picnic Chairman Paul Milholland presents fire extinguisher, one of 15 such prizes, to Mrs. Wilma Byers, game winner at outing.

O-I, Cedar Point and Sandusky officials inaugurate safety sign for picnic. (L. to r.): Paul Milholland, picnic chairman; Al Young, sheriff; G. Roose, president of Cedar Point; William Evans, manager of Cedar Point; Vic Adcock, chief of police, Cedar Point; Jack Darby, chief of police, Sandusky; and Mel Byers, employee services supervisor for O-I in Toledo.



Left, ambulance and first aid unit had equipment to handle almost any emergency. Attendants are Red-Cross-trained. Below, maintenance of rides insured safety. Here a damaged wheel is repaired.





Participant asks question of Dr. Herbert J. Stack, course instructor, over a traveling mike.



Motor-vehicle inspector checks reaction time of student on Porto Clinic driver testing unit.

WHAT WOULD you do, if your employees' off-the-job traffic accident experience increased during the past few years, while their over-all off-the-job accidents decreased? This dilemma faced Esso Bayway Refinery management and safety advisors in planning this year's program.

During the previous four years, Bayway made considerable progress in reducing off-the-job disabling mishaps. These accidents were reduced from 263 to 59 in the 1956-59 span. However, the traffic picture was not encouraging, with the percentage of traffic accidents continu-

## Better Driving for The Whole Family

**Esso Bayway Refinery conducts off-the-job defensive driving course for employees and their families**

**By RICHARD TOSSELL and WILLIAM SABOTA**

RICHARD TOSSELL, assistant director of the Esso Safety Foundation, has been an instructor and advisor in the Bayway Defensive Driving Program. He received his B.A. degree from the University of California at Los Angeles and an M.A. degree in safety education from the New York University Center for Safety Education. He is presently a doctoral candidate at NYU.

WILLIAM SABOTA, personnel assistant, Safety Section, Employee Relations Department, Esso Bayway Refinery, served as coordinator of the program. He received his M. A. degree in safety education at NYU.

A publication is being prepared as a guide to other organizations wishing to implement a program similar to the one described in this article. Copies will be made available to industrial, civic, and governmental agencies on request to Esso Safety Foundation, 15 West 51st St., New York 19, or to Bayway Refinery, Esso Standard Division of Humble Oil & Refining Company, P. O. Box 222, Linden, N. J.

ously increasing during this period. Last year, 54 per cent of total days lost stemmed from traffic accidents, with one fatality.

For many years Bayway has sustained a comprehensive and progressive safety program. During the preceding four years the employees participated in many off-the-job safety activities.

Since 1957, Bayway has had a safety award program based on individual safety performance. Awards are made to employees who have accumulated a specific accident-free period without minor, sub-major, off-the-job disabling or industrial disabling injuries.

In addition to the safety award program, Bayway has conducted

special emphasis programs on problem areas off-the-job. For example, when a significant percentage of the total off-the-job accidents were occurring in the home, these programs were initiated:

In 1956 a home safety essay contest was conducted for employees' children, and cash prizes were awarded to winners. Guided by the success of this program, the home safety essay program was expanded to include a poster contest the following year.

Last year the wives of employees participated in a home safety contest which required each wife to submit a safety program for her family. In addition to cash prizes for the best six entries, all partici-



pants were eligible to choose a gift from Bayway's safety award catalog. More than 45 per cent of the families took part in the latter program.

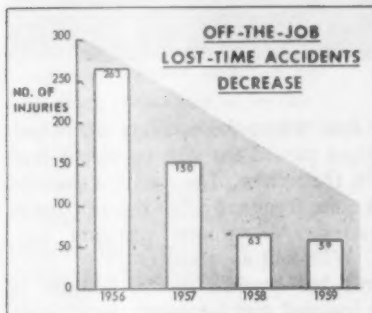
The refinery's experience proved that incentive awards are successful in motivating employees and their families to cooperate in accident-prevention programs. The evidence strongly suggests that these activities were primarily responsible for a remarkable reduction of off-the-job accidents.

**Driver Education.** A special emphasis program was developed by the Esso Safety Foundation in cooperation with the Bayway Central Safety Committee to correct the adverse traffic accident rate. It was believed that a driver education program for employees and their families would obtain the best results.

"Defensive Driving" was selected as the theme for a proposed eight-hour driver education program, reviewed and approved by Bayway's management and union officials. The course was tried out initially with a selected group of employees.

On the basis of Bayway's favorable results with home and recreational safety programs, various incentives for maintaining a high level of interest were utilized. All available means of communication were used, and refinery management encouraged participation.

Complete information about the program and cards for enrolling in the course were sent to employees' homes. This enabled each family to discuss the program and make plans to attend as a group. A special appeal was made to teen-age members of the family.



Why the Defensive Driving Program was inaugurated at Bayway Refinery. While the over-all experience for off-the-job accidents (left chart) improved, traffic accidents showed startling increase over the four-year period.



Even with the best tires (the company's brand, of course) a driver can't stop on a dime. The experience changes a driver's attitude more than any amount of lecturing.

By going into the home with this program, subtle motivational pressures were brought to bear: Dad would encourage Mom and teen-age family members to attend and vice-versa, since most motorists seem to feel the other fellow can improve his driving practice.

The students were guests of the Bayway management for dinner in the refinery cafeteria before each session. After dinner, psycho-physical tests were administered to individuals before each meeting began. Those completing all four sessions of the course were eligible to receive

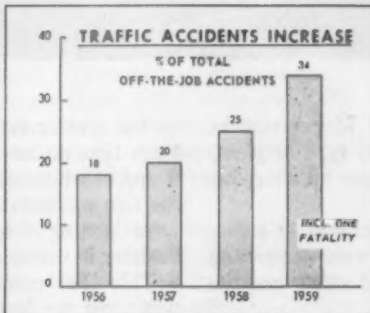
incentive awards. Also, on the basis of performance on the final driver knowledge test, certain drivers were invited to participate in the *Driving Skill Rodeo* for the best male and best female driver awards.

Response from management, union officials, and individual employees at all levels in the refinery was gratifying. Initial enrollment far exceeded expectations. Classes were soon filled to capacity and the first Esso-sponsored course was under way.

**Course Organization.** In the past, many driver training programs for employees have been conducted by industrial organizations. The unique aspect of the Bayway program is that all employees and members of their families were encouraged to attend together.

Four classes of about 300 persons each were signed up for the eight-hour course. Every class attended a two-hour session one night per week for four consecutive weeks. These sessions were held on Tuesday and Thursday evenings, 7:30 to 9:30 p.m. during May and June.

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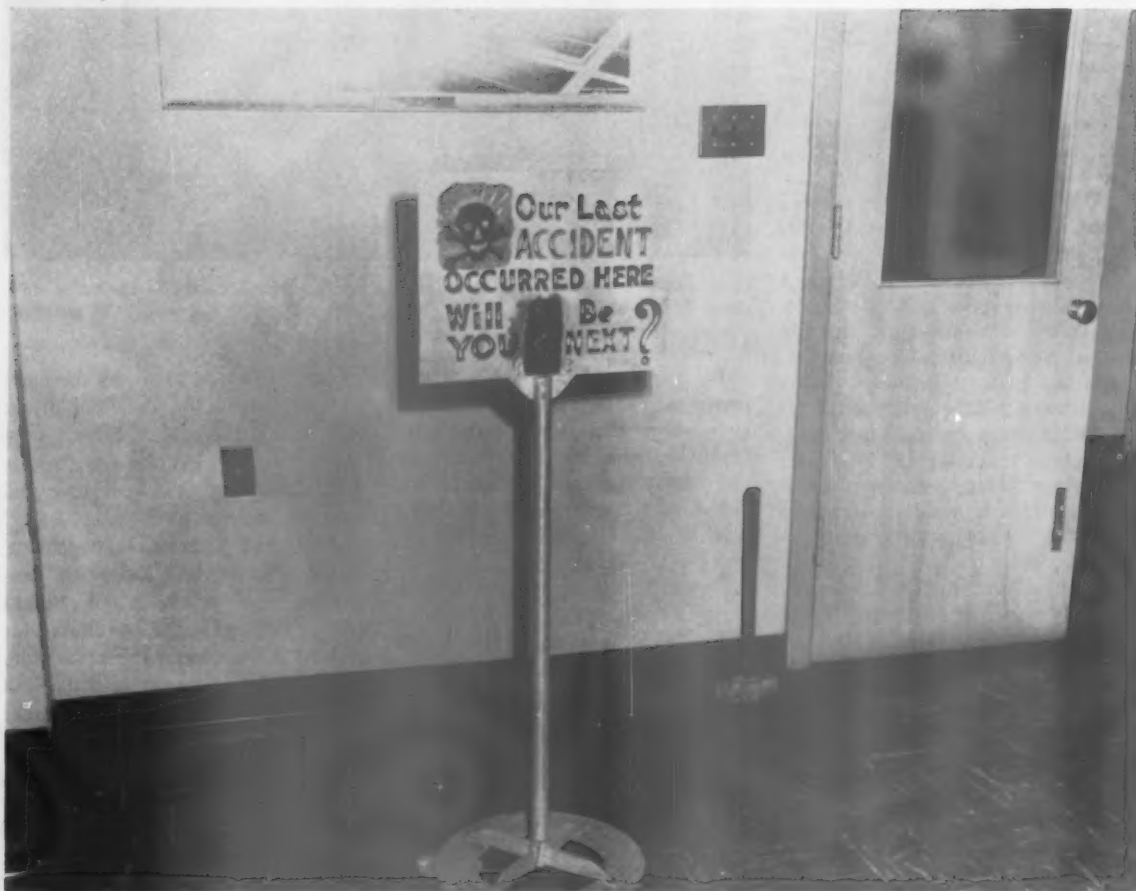


# IDEAS THAT WORKED

Devices and Ideas to Help  
Your Safety Program

By Arthur S. Kelly, Industrial Department, NSC

## Accident Marker



WE WERE a new organization and 75 per cent of our employees had never worked in any type of plant. Safety was a problem and accidents were an everyday occurrence.

Accidents were investigated and discussed in safety meetings. Somehow though, we felt we were not getting over to the employees the importance of safety and the seriousness of accidents.

We decided to try to make it more personal to the employee and made this sign to use in the plant area.

Every time an accident occurred we placed the sign

on the spot or very near where the accident happened. Each time an employee passed the sign he would read it and see himself in the mirror. The first few months the sign was moved quite frequently, but the employees were getting interested. A common question was, "Where is the sign? Who had an accident?"

This idea certainly has worked for us because in two years we have lowered our frequency rate nearly 70 per cent and found it necessary to store the sign as it stayed in one spot so long it became weathered and damaged.

TO MAKE a tubular steel framed barricade that would protect street openings without blowing down, Ervin Dziengielewski, foreman in the Construction and Repair Department of Milwaukee Gas Light Company, made this frame—now standard equipment in the department. He weights it with warning planks from his truck.

Essentially, this barricade is a combination of several "U's" with short legs linked. Made of 7/8-in. cold rolled steel, the structure has also provided more space on trucks, reduced cuts and slivers, and increased vehicle tire life.

Dziengielewski, below right, and Norman Burzlaff, superintendent of special assignments for the organization, say companies using wooden legs on barricades could accomplish this result by notching a 2 x 4 or making a metal bar with a "U" on each end to fit the cross bars.

Submitted by Warren E. Fuhrman, safety director, Milwaukee Gas Light Co., Milwaukee, Wis.

## Blow This Barricade Down!



## From His Nib's

### THE WINNER

The prizewinning idea in the August issue was "Spin Yourself an Accident!" This idea was submitted by T/Sgt. Herbert W. Shockey, director of ground safety, USAF Aerospace Medical Center, Brooks Air Force Base, Texas. Spaced around a wheel of chance are most of the types of injuries suffered by the air base personnel in recent years. If anyone wants to take a chance, he can take it on the wheel. The sign urging "Take your chances here—not on the job or highway" is painted on a fluorescent background.



This is NIB'S.  
Say! Have you heard about my latest accident? It was the darndest thing.

A LITTLE CHARACTER named "Nib's" is speaking out for safety from the bulletin boards of Nibco, Elkhart, Ind. The creation of Dave Milbourn, safety supervisor for the firm, Nib's helps publicize facts about accidents. He also appears in the company publication and in posters developed from time to time.

As this illustration shows, Nib's offers a down-to-earth safety message, without too much attention paid to precise grammar. He's a pretty effective little sprite.

Submitted by John Burt, director of personnel, Nibco, Elkhart, Ind.

"I was at the Riverside foundry working the second shift, it was about 5:15 a.m. I was up on the first stage of the cupola checking the sand muller. Someone shut off the air and I made a mad dash down the steps to shut off the switch to the distributing conveyor.

"From here on things are a little bit confusing, as I remember my foot slipped on the way down. I reached out to catch myself on that new catwalk that was put up during the vacation.

"My right arm hit the sharp edge about halfway between my wrist and elbow. I ripped it open from there on clear down into my little finger. I was taken over to the hospital and the doctor sewed me up. I asked him how many stitches and he told me that he quit counting when he reached 15.

"The safety man asked me what I thought the contributing factor was and after thinking it over I said, 'Haste makes waste.' This is a heck of a way to finish out the summer—with a sore flipper."

# ELECTRICAL TEST EQUIPMENT

*Copies of this data sheet will be  
available for order within 30 days*

## Introduction

1. The purpose of this data sheet is to serve as a safety guide for the appraisal of existing practices and equipment in electrical testing operations and to assist in the planning and setting up of new operations so that they will be as free of hazards as possible.

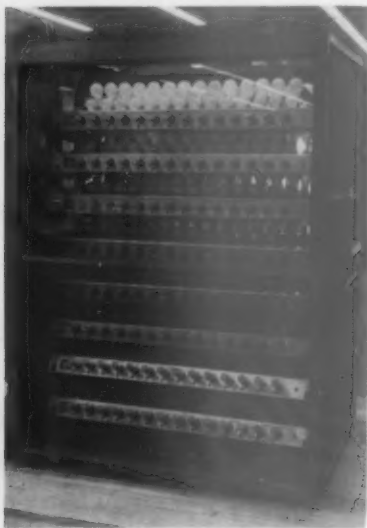


Figure 1. Aging rack for general-purpose tubes. Operating voltages are applied to tubes for a few hours to activate and age them. Glass doors protect operator from hot or exploding tubes. Interlocks on shelf and cabinet doors de-energize circuits when these doors are opened. All metal surfaces are grounded. Circuits are protected with circuit breakers or fuses to guard against overheated equipment. (Courtesy Western Electric Co., Allentown Works)

This data sheet is one of a series published by the National Safety Council, reflecting experience from many sources. Not every acceptable safety procedure in the field is necessarily included. This data sheet should not be confused with American Standard safety codes, federal laws, insurance requirements, state laws, rules and regulations, or municipal ordinances.

2. Electrical test equipment should be designed, constructed, selected, and installed to provide for safe procedures, so that the operator's exposure to hazards will be at a minimum. All electrical installa-

tions should be made in accordance with the *National Electrical Code*.\*

## Test Environment

3. Proper layout of the test laboratory and of test setups throughout the plant is fundamental in achieving injury-free experience and is conducive to easier and more efficient maintenance. The construction of a new plant offers opportunity to set up a properly designed and safe environment. In an existing plant, when changes are made in the test department and in plant procedures which

\*Standard No. 70, National Fire Protection Association; also published by National Board of Fire Underwriters.



Figure 2. Applying insulation test to switchgear equipment. Note that test operator is the only one allowed close to equipment. Observers and others are warned by ribbon-type warning fence. (Courtesy Westinghouse Electric Corp.)



include floor test setups for routine testing of components in process, necessary corrections can be made in the working equipment and environment.

4. Areas in which testing operations involving live circuits are performed should be enclosed with barriers or blocked off completely. Fencing with interlocked gates is preferable unless the size, layout, or other characteristic of a testing area renders this method of guarding impracticable. In all cases, in addition to the barriers and the interlocks on all gates, approved and effective warning signs and signals should be used to indicate when the power is turned on.

5. Test personnel should allow no unauthorized person to enter the enclosed area; and, where test procedures permit, they themselves should remain outside the barriers while tests are being made.

6. Before equipment is wired for testing, it should be arranged for the convenience, safety, and unobstructed exit of test personnel. Rotating machinery and test apparatus should be so located that a tester is not required to stand in the line of a moving belt or adjacent to rotating elements. Wherever necessary, guards should be provided to protect the tester, and switches should be locked "off" or fuses pulled so that power cannot be applied inadvertently.

7. All connections to tables, bus bars, plug racks, terminal cabinets, and distribution boards should be securely made. With overhead wiring, a splice in a cable, however made, is not to be depended upon for mechanical strength. Cables should be fastened to each other or to a supporting member, such as a carrier cable, so that the electrical connections are subjected to no mechanical strain. Connectors joined to cables should be properly insulated.

8. All temporary wiring, including distribution or relay board wiring from power source to equipment being tested, should be checked before power is applied. Neatness in wiring is essential to safety. Cables should be selected for proper insulation, adequate length, and sufficient carrying capacity. Where traffic passes over temporary wiring on

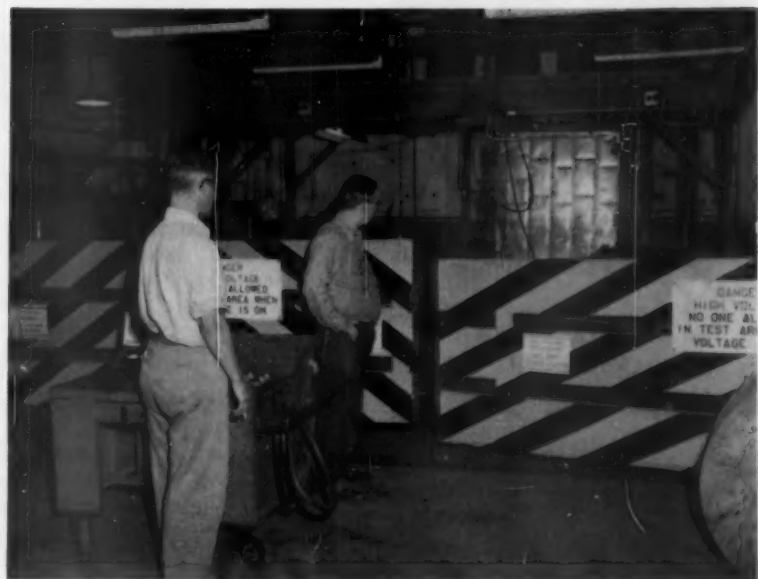
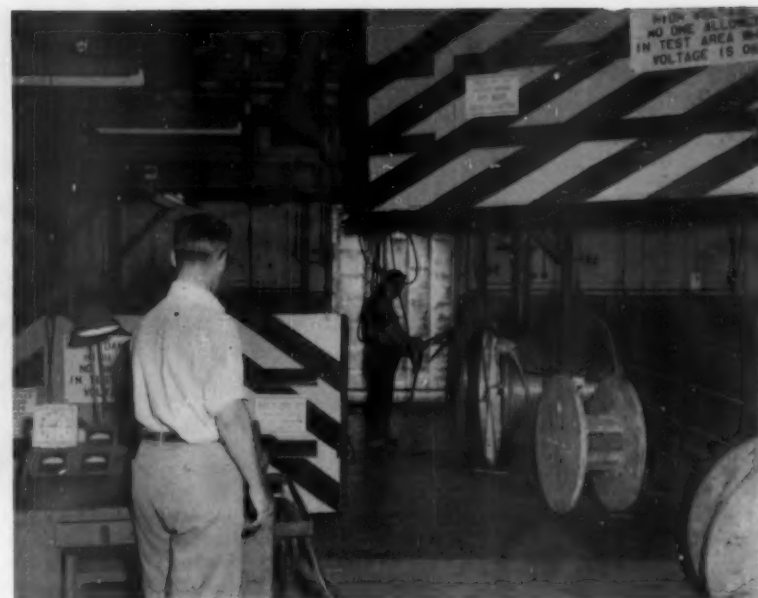


Figure 3. Electrical test area for checking insulated cable. Top picture shows gates in raised position which allows employees and materials to enter area. Electrical connection between two gates acts as disconnect for test power. In lower picture, all personnel have left area and gates are electrically interconnected to supply power for testing without hazard to employees. (Courtesy Simplex Wire & Cable Co.)

floors, suitable covers with warning signs or devices should be employed.

9. Electrically powered equipment should be grounded—that is, connected to a ground rod, uninsulated water pipe, floor plate, or the iron framework of a building in such a manner as to provide a path of low resistance to earth. When a

ground is secured to the frame or chassis of the equipment, a person standing on the floor or in contact with a ground will be at the same potential as the frame or chassis and thus less subject to shock if a short circuit should occur.

10. All grounding should be in compliance with the *National Elec-*



Figure 4. Enclosed area for testing operations. Normally, everyone except test personnel are excluded from the test area. Sign on gate reads, "Caution Do Not Enter without Permission." (Courtesy Westinghouse Electric Corp.)

*trical Code.* Chains, which provide intermittent connections, should not be used to ground equipment.

11. Under some test conditions, circuits cannot be grounded. In these cases, the operator must be insulated from ground so that he can work on circuits which have considerable voltage to ground. The insulation provided for the operator should be carefully selected, tested thoroughly before being used, and given dielectric tests at regular scheduled intervals.

12. Before making or breaking a

connection to a terminal board, bus bar, resistance rack, starting rheostat, test table, distribution board, or other testing device, each tester personally should make certain that the power connecting switches, plug leads, or circuit breakers are open and that the circuit is dead. Where possible, power supply breakers should be locked "off" (open) by the tester who is going to work on connections and should remain locked "off" until he is ready to re-energize the equipment.

### General Precautions

13. Adding guards after equipment has been obtained may be inconvenient, inefficient, and expensive. As a result, unsafe equipment, presenting serious hazards, is sometimes used. Therefore, when test equipment is ordered, the safety features which should be incorporated in it should be specified. Elements which should receive close attention include cables (correct size and proper insulation), connections (ample capacity and securely made), and protective devices (interlocks, overload relays, and fuses).

14. Testers and technicians should follow without deviation the exact methods of adjustment, operation, and repair of test equipment given in instruction books and diagrams, which should be obtained from the equipment manufacturer. Instruction books should cover the following topics:

- a. Description of equipment
- b. Theory of operation
- c. Installation and initial adjustment
- d. Operation
- e. Operator's maintenance
- f. Preventive maintenance
- g. Corrective maintenance
- h. Parts list

15. No alteration nor addition should be made to permanent testing equipment without the approval of the test supervisor. Only test department technicians or the manufacturer should do maintenance and repair work on the test equipment itself.

16. Each piece of equipment should be clean and in first-class condition before being connected into a circuit or otherwise used in a test. A damaged or defective piece of apparatus should be reported at once to the test supervisor. A "Danger" tag or a "Defective Equipment" tag, stating the nature of the defect, should be affixed to such apparatus. After repairs have been made, the equipment should be approved by the test supervisor before it is placed in service.

17. Testers should move heavy equipment only under specific instructions from the test supervisor, to reduce the possibility of serious injury from strains.

### Meters

18. Meters must be handled carefully because of the delicate construction of the instrument move-



Figure 5. Removing key from power switch, which can be done only after switch is locked in "off" position. Key can then be inserted in transfer box (at right) to release key for transmitter compartment door. (Courtesy American Telephone & Telegraph Co.)



Figure 6. Opening transmitter compartment door lock with key obtained from transfer box. (Courtesy American Telephone & Telegraph Co.)



Figure 7. Miniature tube test area. Many types of miniature tubes are given final electrical tests here. The testing equipment is designed with such safety features as: no exposed wires . . . doors covering exposed test circuits are interlocked to de-energize circuits when doors are opened . . . all metal surfaces are grounded . . . circuits are protected with circuit breakers or fuses to guard against overheated equipment. (Courtesy Western Electric Co., Allentown Works)

ment. Rough handling and jarring will dull the pivot points and cause loose fit and excessive friction.

19. When meters are not in use, they should be properly stored to prevent foreign matter from entering the bearings and causing inaccuracies. The meter cabinet should be located in an atmosphere as dustproof and moistureproof as possible. It should be shock-mounted to prevent vibrations from reaching the meters in storage. A meter should be stored with its face in the plane which will relieve the pivots of the weight of the meter movement.

20. Meters should be repaired only by a qualified meter repairman, who employs tools and skills similar to those of a watchmaker. When highest accuracy is desired, the meter should be calibrated throughout the scale in the particular position in which it is normally used.

21. Preliminary readings on the highest scale always should be taken when unknown currents or voltages are to be measured so that the proper scale to use to prevent damage to the meter or instruments can be determined.

22. In addition to meters, many tests require power measurement devices and standard source-of-energy calibrated circuits for measurement of frequency. Personnel should be

fully instructed in the characteristics of the various instruments and in their safe operation before being permitted to operate them. The importance of having instruments repaired or serviced as soon as a defect is found should be emphasized.

### Maintenance of Equipment

23. Exact methods of adjustment and repair are given in detail in the instruction book provided with each piece of test equipment. Some general principles of maintenance, however, can be outlined here.

24. Maintenance should include not only emergency repairs but also regular physical inspections, lubrication and cleaning schedules, and various tests to reveal possible sources of trouble. Also, periodic tests and inspections ensure that all safety devices are functioning properly. Whether the maintenance be corrective or preventive, it should be conducted methodically.

25. In following preventive maintenance schedules or after receiving reports of trouble, the technician should refer to instruction manuals, maintenance bulletins, periodicals, and symptomatic trouble charts for the equipment. Safety measures for each model of equipment will usually be found in its instruction book. These measures and general safety instructions should be given partic-

ular attention by the maintenance technician, who should outline the various steps he is to take in diagnosing trouble, localizing faults, and testing, inspecting, or lubricating.

26. In locating faults, the maintenance technician should first test those parts which are most accessible and most vulnerable. If such checks do not disclose the defective components, then voltage checks, point-to-point resistance measurements, or other trouble-shooting techniques may be necessary.

27. In isolating trouble, the technician may find it helpful to refer to the equipment's history, which should be recorded in an equipment log. Such a log serves as a record for tube readings, circuit voltages, reports of trouble and corrective action taken, and changes in the equipment. The log is also useful in



Figure 8. Cylinder-locked interlock on a traveling wave tube test set. Safety features include the following: the tube is mounted in a special test fixture whose cover must be closed when operating potentials as high as 2,900 volts are applied; an interlock will de-energize the test position when the fixture door is open . . . back doors and side doors of test set are interlocked so that electric power will be disconnected when these doors are opened and internal circuits exposed . . . all metal surfaces are grounded . . . circuits are protected with circuit breakers or fuses to guard against overheated equipment. (Courtesy Western Electric Co., Allentown Works)





Figure 9. Instruction manuals and equipment histories are valuable aids for use by operating and maintenance personnel in locating trouble quickly. They are effective when used for training purposes, establishing operating and maintenance procedures, and to avert injuries to personnel and damage to equipment. (Courtesy Westinghouse Electric Corp.)

planning for spare parts, determining characteristics of equipment, and establishing performance records.

### Selection and Training of Personnel

28. It is essential that test department personnel, who may encounter dangerous voltages and other hazards, be selected carefully and impressed with the seriousness of their responsibility for accident prevention. The accident rate in the test department may well have a direct relationship to the care with which personnel are selected. Fundamental knowledge of test circuitry and equipment to be tested is an obvious requirement. Other characteristics, however, such as neatness, attention to details, and inherent carefulness, are equally important.

29. Test department personnel must be trained to adhere rigidly to established methods and procedures unless specific instructions to the contrary have been issued by the supervisor. Otherwise, in their concern for optimum functioning of equipment, they may deliberately neglect required precautions.

30. The safety program should be designed to make each test department employee an electrical

safety specialist trained to recognize and correct unsafe conditions whenever they occur.

31. In addition to understanding his specialty and the equipment he uses (its construction, functions, and limitations), the tester must be able to meet various kinds of emergencies. He should be trained to give first aid, including, of course,

artificial respiration, should be familiar with fire-fighting techniques, and should know standard precautions for nonelectric hazards associated with his duties.

### REFERENCES

*Electrical Safe Practices* (booklets), Westinghouse Electric Corporation, Pittsburgh 30, Pa.

*Fundamental Naval Electronics* (Naval Personnel 10808), Bureau of Personnel, U. S. Navy, Washington 6, D.C.

*National Electrical Code*, Standard No. 70, National Fire Protection Association, Boston 10; also published by National Board of Fire Underwriters, New York 7.

*Safe Practices*, International Business Machines Corporation, New York 22.

### ACKNOWLEDGMENT

This data sheet was prepared by F. C. Perego, supervisor of safety, Air-Arm Division of Westinghouse Electric Corporation, and by the Engineering Committee of the Electrical Equipment Section, National Safety Council. The data sheet has been extensively reviewed by members of the National Safety Council and by representatives of chapters of the American Society of Safety Engineers. It has been approved for publication by the Publications Committee of the Industrial Conference of the Council.



Figure 10. Example of proper care and storage of test equipment. Meter cabinet and bench test equipment are located in humidity-controlled and dust-free room. (Courtesy Westinghouse Electric Corp.)



# PYRENE

## liquid agent extinguishers assure plant-wide fire protection

If plant-wide fire protection is your responsibility . . . your local Pyrene-C-O-Two distributor is the man to consult! He carries Pyrene's complete line of liquid agent extinguishers, featuring stainless steel finish, 100% steel-constructed water, soda-acid, foam and loaded stream units. Specifically, he offers clear water or soda-acid units for heated areas where ordinary combustibles, such as paper, wood, fabric or rubbish are chief hazards. For unheated warehouses, mills, docks, sheds etc., he stocks anti-freeze units. For ordinary combustibles and flammable liquid hazards, he has available foam or loaded stream extinguishers. And for areas where flammable liquid and live electrical equipment constitute threats—including trucks and other mobile apparatus—he carries vaporizing liquid units. The chart below summarizes the range of this complete liquid agent extinguisher line. Your Pyrene-C-O-Two distributor will help you select from these . . . or he can also show you a complete line of Dry Chemical or Carbon Dioxide extinguishers. Look for his local listing in your Yellow Pages under "Fire Protection Equipment."

**...featuring stainless steel: water,  
soda-acid, foam and loaded stream units!**



CLEAR WATER, Pressurized or Cartridge Type—2½ gal.

ANTI-FREEZE, Pressurized or Cartridge Type—2½ gal.

PUMP TANK (Anti-Freeze or Plain Water)—2½, 5 gal.

SODA-ACID—2½, 20, 40 gal.

LOADED STREAM, Pressurized Type—2½ gal.

FOAM—2½, 20, 40 gal.

VAPORIZING LIQUID, Pressurized Type—1, 2 qt., 1 gal.

VAPORIZING LIQUID, Hand Pump Type—1, 1½ qt.



products of THE FYR-FYTER COMPANY, Dayton 1, Ohio

Branches: Atlanta, Baltimore, Boston, Chicago, Dallas, Dayton, Detroit, Los Angeles, New York, Newark, Philadelphia, Pittsburgh, Portland, Rochester, San Francisco, Toronto (Ontario). Representatives and Distributors in all principal cities.



*Gen. Alfred M. Gruenther*

Alfred Maximilian Gruenther was born at Platte Center, Neb., March 3, 1899. He was graduated from the U.S. Military Academy November 1, 1918, fourth in his class, and was commissioned a second lieutenant of field artillery. When the armistice was signed on November 11, 1918, his class was sent back to the U.S. Military Academy and remained there until 1919.

From 1919 to 1941, he served in routine work at West Point. In October 1941 he was appointed deputy chief of staff of the Third Army, San Antonio, commanded by Lt. Gen. Walter Krueger. Brig. Gen. Dwight D. Eisenhower was chief of staff. A few days after Pearl Harbor in December 1941, Gen. Eisenhower was transferred to Washington, D.C., and Lt. Col. Gruenther was made chief of staff of the Third Army.

On August 1, 1942, he was transferred, as a brigadier general, to London as deputy chief of staff, Allied Force Headquarters, under Gen. Eisenhower. In January 1943 he was named chief of staff of Gen. Mark W. Clark's Fifth Army in North Africa. He served as Gen.

Clark's chief of staff throughout the rest of the war.

When Gen. Clark became commander of the U.S. Forces in Austria in July 1945, Gen. Gruenther was named deputy commanding general. He served there until he returned to the United States in December 1945 to become deputy commandant of the National War College, which opened in September 1946.

In October 1947 he was appointed as the first director of the Joint Staff, which served as the staff for the Joint Chiefs of Staff. In September 1949 he became deputy chief of staff for plans in the Department of the Army.

Gen. Gruenther was appointed chief of staff of the Supreme Headquarters of the Allied Powers in Europe in January 1951 under Gen. Eisenhower. In July 1953 he succeeded Gen. Matthew B. Ridgway as supreme allied commander in Europe and as commander-in-chief of the U.S. European Command. He occupied both of these posts until late November 1956, when he returned to the United States to retire on December 31, 1956.

## Gen. Gruenther Joins Congress Offensive

GEN. ALFRED M. GRUENTHER, former supreme allied commander in Europe and now president of the American National Red Cross, will be banquet speaker at the 1960 National Safety Congress in Chicago.

He will address Congress-goers on Tuesday, October 18, at the Conrad-Hilton on "American Responsibilities in a World of Missiles and Misunderstandings."

Centered around the theme "SAFETY EVERYWHERE . . . all the time!" the National Safety Congress and Exposition will cover the span of safety in a space age in speeches, panels, demonstrations, and exhibits. More than 900 program participants will take part in 300 sessions at eight Chicago hotels during the October 17-21 span of events.

Commercially, there will be 187 exhibits and six educational displays; 249 booths plus six educational areas. Another special event is the Congress party, scheduled for Thursday, October 20, at the Conrad Hilton.

The Annual Council Meeting on Monday morning in the Hilton will be a business session with election of officers. This and hundreds of other activities are included in the printed Congress program.

Browsing through it, many interesting programs are evident. For instance, L. S. Smith, director of public relations for Thilmany Pulp and Paper Company, Kaukauna, Wis., will speak to the Occupational Health Nursing Section Wednesday morning on "Management's Approach to the Problem of Dealing with the Handicapped and Their Rehabilitation."

Wednesday afternoon the Public Utilities Section is slated to hear "Frequency Zero," a presentation by Sam C. Sharp, vice-president,

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## *All-Americans for a Winning Materials Handling Team*

**These three championship performers give you a materials handling team that is unbeatable... All-American from the basic steel—through the drawing of the wire—to the finished wire rope product.**



**All-American No. 1 — Whyte Strand Wire Rope.** Inspires other members of your team, brings out the best in them for maximum production at lowest cost. (Write for bulletin 6025.)



**All-American No. 2 — The Atlas Sling for the safety spot —** lifting and carrying all kinds of loads. Flexible, braided construction provides constant championship performance with unquestioned safety. (Write for bulletin 5308.)



**All-American No. 3 — Macwhyte Safe-Lock Cable Assemblies** are a triple-threat specializing in uniformity, appearance, and agility... for manufactured products and equipment components requiring the positive performance of a custom-made cable assembly. (Write for bulletin 5601.)

In addition to their outstanding performance on the materials handling and production fields, each one of these All-Americans lives up to these championship qualifications: *Dependability* that is the result of constant uniformity, maintained by rigid quality controls at every step of manufacture. *Experience* that pays off in high production scores... and game-winning play with other members of your equipment team specializing in Amer-

ican rules of the game. *Availability* guarantees the right player for every play, whether at the factory or the warehouse... backed up by expert engineering service. *These All-American products are completely made in the U. S. A.*

Start now to build up your All-American materials handling team. Your Macwhyte representative will be glad to coach your selections.



# MACWHYTE *Wire Rope* COMPANY

# Five Complete Home Study Course



Four of five recent graduates of the Council's home study course for supervisors receive their certificates from Earle F. Gill, personnel manager for the Post Office Department, Chicago region. R. to L.: L. C. Smith, NSC training director; Francis J. Kelly; Fred Toxopeus; William C. Spadafore; Carlisle R. Evans; and Gill. The fifth recipient, Kenneth McCallum, was not present.

In October 1959 200 industrial supervisors started a home study course, "Supervising for Safety," conducted by the Council's Industrial Safety Training Institute as a pilot program. Several weeks ago five students were graduated—the first group to graduate under a single sponsor—given certificates, and commended for their average score of 97. Passing was 70.

The quintet, members of the Post Office Department's Chicago region, includes: Carlisle R. Evans, delivery services foreman, Rock Island, Ill.; William Spadafore, general staff assistant, Pontiac, Mich.; Francis J. Kelly, station examiner, Joliet, Ill.; Fred Toxopeus, route examiner, Muskegon, Mich.; and Kenneth McCallum, assistant superintendent of mails, Royal Oak, Mich.

These five line supervisors began the 12-lesson course in December 1959, finishing it in four to six months, well within time limits.

Subject matter covered safety and the foreman, knowing your accident problem, the human element, maintaining interest in safety, instructing for safety, health and first aid, safe dress and personal protective equipment, departmental housekeeping, materials handling and storage, guarding machines and equipment, hand and portable power tools, and fire prevention and control.

Originally, the regional safety officer wrote to the postmasters of five installations, requesting views on this voluntary home study course and whether their respective safety supervisors would feel free to devote part of their off-duty time to take the course.

Most of the supervisors contacted are family men, with children and other responsibilities, but they volunteered to finish the 12 lessons in the required period. As mentioned, they completed the program in half the allotted year.

## New Agency Takes Over Advertising Campaign

Spurred by the continued traffic accident toll, emphasized by the record of 442 persons killed and 15,000 injured during the 1960 Fourth of July weekend, G. M. Basford Company has started work as the new volunteer advertising agency for The Advertising Council's Stop Accidents Campaign conducted for the National Safety Council.

H. T. Rowe, director of information for International Business Machines and volunteer coordinator, announced that the new agency assumes the creative responsibilities carried for several years by Campbell-Ewald Company. Winsor H. Watson, Jr., vice-president at G. M. Basford, will head the agency's task force in the campaign.

The campaign will emphasize the fact that traffic accidents kill more children aged 1 to 14 years than any other cause. The campaign theme, "Where Traffic Laws Are Enforced and Obeyed, Deaths Go Down," will seek civic support for positive steps to reduce traffic accidents.

Each year, users of advertising and media contribute \$8 to \$10 million worth of advertising space and time to this national public service project. The National Safety Council has credited the 15-year old campaign as important factor in accident control.

## Eight-Month Shutdown

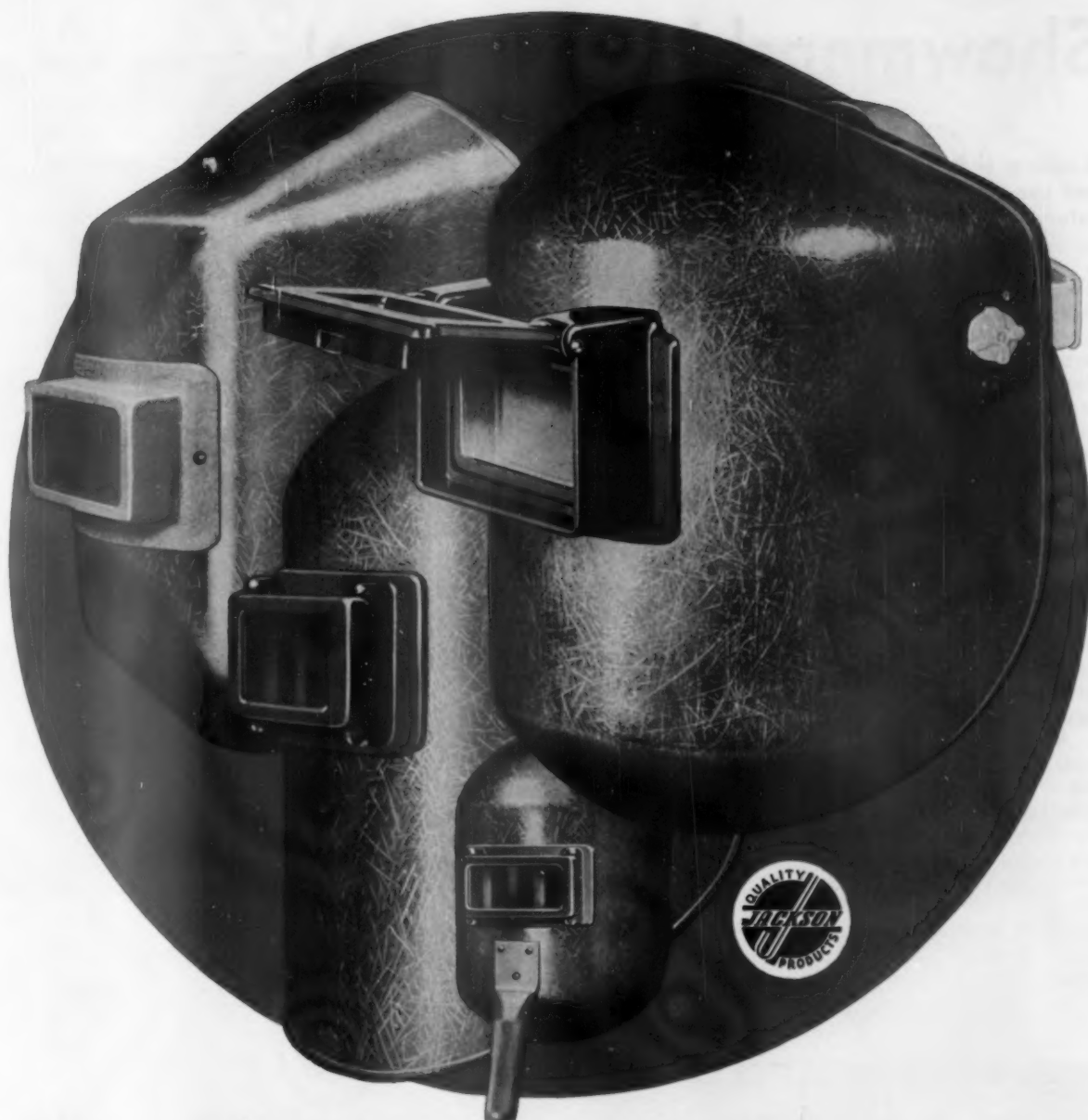
Though workers suffer more accidental deaths and injuries off the job than on, work injuries in the last 10 years cost industry the equivalent of eight months of production.

Total time lost from work injuries amounted to nearly two and three-fourths billion man-days—equivalent to the shutdown of all the nation's manufacturing plants for more than eight months.

An estimated 300 million man-days will be lost in future years from work accidents during 1950-59.

From *Accident Facts—*  
1960 Edition.





## Now, BOTH Kinds of Arc Welding Helmets

What do you prefer—Fiber Glass or Vulcanized Fiber? Jackson now offers them both. For the first time you can get Jackson quality in a traditional vulcanized fiber helmet. As always, you can get Jackson quality fiber glass helmets that are strong, durable, and non-warping.

Sold Everywhere by Better Welding  
and Safety Supply Distributors

- ★ All Jackson helmets have your choice of the three Lens Holders shown above (left to right: metal, plastic, and plastic lift-front).
- ★ All Jackson helmets have the Adjust-O-Lok Headgear of non-conductive, light-weight Nylon plastic. It provides adjustment to exact headsize while being worn. Helmet stop and cross-strap are also adjustable.
- ★ All Jackson helmets can be purchased as Cap-and-Helmet combinations: your choice of helmet pivoted to your choice of three Jackson safety caps.

### Jackson Products

AIR REDUCTION SALES CO., A DIVISION OF AIR REDUCTION CO., INC.

31739 Mound Road, Warren, Michigan

# Showmanship Sells 'Em!

**A rolling shoe store with eye- and ear-catching gimmicks put safety shoes on 250 more feet.**

TWO DOLLARS worth of lumber, some flexible plastic sheeting and a can of white paint transformed an ordinary hand truck into an attractive mobile shoe store. Safety shoes of all types, styles and sizes were mounted on display racks, and the store was ready to roll through the plant of the Dayco Corporation (formerly The Dayton Rubber Company) to sell employees on foot protection.

"Get safety shoes out of the box and right in front of every employee and more people will buy and wear them," reasoned Ray Hart, Dayco safety director. So the mobile display, nicknamed "Hart's Cart," was devised.

Advance notices on plant bulletin boards called attention to schedules for visits to various departments. Wherever possible, visits were timed to coincide with smoke breaks, not because of production problems but to test the effectiveness of the idea. If some men even looked at the shoes on their own time, the idea was well worth the effort, thought Hart.



With a red light blinking and a cow bell ringing, "Hart's Cart" brought the shoe store to the men on the job. "Injured" employees on crutches attracted much attention and emphasized the sales pitch.

Getting safety shoes away from the company store and bringing them to the workers was a new idea in itself. But it still wasn't unusual enough.

What the idea needed was a little old-style medicine show hoopla. There had to be an eye-catching, bell-ringing grand entrance into

each department to overcome the normal torpor of employees during smoke breaks.

The brightly painted shoe cart was attractive but too static. Two red flashing lanterns with self-contained batteries were mounted at front and rear for visual impact.

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◀ Another sale—ten more toes protected.

Getting a "cripple" ready for the demonstration.



# THE PAX COMPLETE LINE

## SKIN CARE DIVISION

ALL TYPES OF GRANULATED AND  
POWDERED SKIN CLEANSERS  
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REALLY GREAT PAX THERMO-  
CIPAL CLEANERS

# PAX



YOU CAN DEPEND ON PAX LABORATORIES TO ALWAYS BRING YOU THE BEST  
IN CLEANSING TECHNOLOGY.



LOOK FOR THE PAX ROOSTER. This famous SEAL and ROOSTER TRADEMARK on each PAX product you purchase is your guarantee that it has been PRE-TESTED and conforms to the PAX deep-rooted rich tradition of RESEARCH, and MERIT, assuring you of the greatest degree of PROGRESS, VALUE and SERVICE in every price range. The PAX reputation for INTEGRITY is backed by over thirty years of pace-setting RESEARCH and MANUFACTURING SKILLS.

**G. H. PACKWOOD MANUFACTURING COMPANY**

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You get the

best features

# first from FendALL

America's leading designer and manufacturer of safety glasses



## to solve bridge fitting problems with **MULTI-FIT BRIDGE**

In 1957, Fendall pioneered the amazingly versatile Multi-Fit Bridge. Available in acetate and metal frames, this patented one bridge size automatically fits 9 out of 10. Self-adapting to wearer's face, no involved try-ons, no bridge adjusting. Fit practically every worker with one bridge size. Reduces inventory. Proved most comfortable... thousands in daily use.



## to solve temple-fitting problems with **ADJUSTABLE TEMPLE JOINTS**

Another Fendall engineering first, available only on Fendall Safety Glasses. Front end of temple is designed so it can be adjusted for perfect temple fitting on all faces. For a narrow face, bend it in; for a wide face, bend it out; permits temple adjustment to provide the right amount of tension to prevent slippage.



## to solve loose temple screw problems with **LOK-TITE HINGE PINS**

This exclusive Fendall feature eliminates the trouble and annoyance caused by loose and lost temple screws. Fendall's Lok-Tite Hinge Pins snap in easily, lock in position, cannot fall out, yet are simple to remove.

These are just a few of the features that make Fendall Safety Glasses your best buy.



FENDALL PRODUCTS

FEND ALL HAZARDS

# FENDALL COMPANY

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## COMING EVENTS



in safety and related fields.

### Sept. 14-16, Raleigh, N.C.

Second Annual Plant Engineering and Maintenance Seminars. J. R. Ogburn, Industrial Experimental Program, School of Engineering, North Carolina State College, Raleigh, N.C.

### Sept. 15-16, Rockland, Maine.

Thirty-third Annual Maine State Safety Conference (Samoset Hotel). Arthur F. Minchin, secretary, Department of Labor and Industry, State House, Augusta, Maine.

### Sept. 22-23, Baltimore, Md.

Governor's Annual Safety Health Conference and Exhibit (Hotel Emerson). Joseph A. Haller, executive chairman, Safety Conference, State of Maryland, 301 W. Preston St., Baltimore 1, Md.

### Sept. 27, Manhattan, Kan.

Eleventh Governor's Industrial Safety Conference of Kansas, (Kansas State University). Harold L. Smith, Commissioner of Labor, c/o Department of Labor, 401 Topeka Blvd., Topeka, Kan.

### Oct. 10-12, Charlotte, N.C.

Twentieth Congress on Industrial Health (Hotel Charlotte). Dr. B. Dixon Holland, secretary, Council on Occupational Health, American Medical Association, 535 N. Dearborn St., Chicago 10.

### Oct. 17-21, Chicago

Forty-eighth National Safety Congress and Exposition (Conrad-Hilton Hotel). R. L. Forney, secretary, National Safety Council.

### Oct. 26-27, Pittsburgh, Pa.

Twenty-fifth Annual Meeting, Industrial Hygiene Foundation, (Mellon Institute). Dr. H. H. Schrenk, managing director, 4400 Fifth Ave., Pittsburgh 13, Pa.

### Oct. 31-Nov. 4, San Francisco.

Eighty-eighth Annual Meeting, American Public Health Assn. Dr. B. F. Mattison, executive director, APHA, 1790 Broadway, New York.





## Bethlehem Braided Sling handles 57-ton forging with ease

This generator-rotor forging for the Large Steam Turbine-Generator Department, General Electric Company, was no problem at all for this Bethlehem 8-part braided sling.

Bethlehem slings can handle just about any lifting assignment. Strong and flexible, they have good load-

hugging characteristics. We supply them in a wide variety of styles and sizes.

If you have a lifting problem, a Bethlehem sling may be just the answer you're looking for. Full information is available from the nearest Bethlehem sales office. BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

Export Distributor: Bethlehem Steel Export Corporation

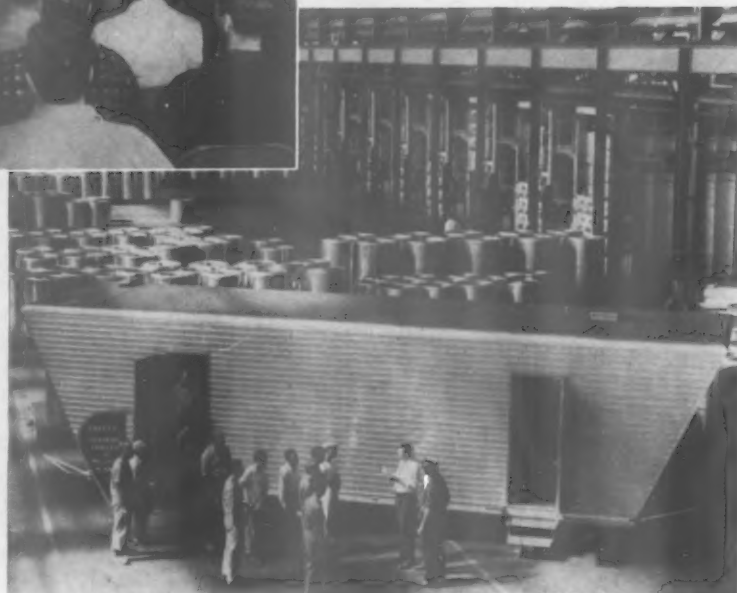
# BETHLEHEM STEEL





Walter L. Bouchard, safety director at the McCook, Ill., plant of Reynolds Metals Company, gives pointers on traffic safety in the plant's new safety trailer. It is air-conditioned and has built-in sound and audio-visual equipment.

Men at McCook plant gather outside trailer for one of the regularly scheduled safety training programs. The trailer is made of aluminum sheet produced in the plant and put together by the men.



## They Built It Themselves

**FACED WITH HAVING** to travel across acres of plant to get to safety meetings, the 2,200 workers of Reynolds Metals' McCook, Ill., plant built their own 30-person trailer to bring safety messages to them. The result: a program that has reduced the plant's accident frequency rate by more than 50 per cent.

"There are 62 acres under roof here," says W. L. Bouchard, safety director of this aluminum sheet and plate fabricating operation. "It was virtually impossible to pick one location all employees could get to conveniently and without losing a lot of time."

The solution, suggested by plant superintendent R. N. Mitchell, was to use a trailer that could be moved easily from one section of the plant to another.

An old semi-trailer was bought from one of the carriers serving the plant. Funds for revamping it were authorized by the company, and the staff began to plan the project in detail.

But they hadn't reckoned with the team spirit of the other employees.

As word of the project spread, departments and individuals throughout the plant came forward to volunteer ideas, materials and—most important of all—ingenuity and technical skill.

Before long, workers were moving ahead with this project, while plant officials stood by amazed and delighted.

First, men in the carpenter shop decided a scale model of the trailer-to-be was a must—as a practical guide and as inspiration. So they made one.

Engineers in the maintenance department, with an eye to the comfort of fellow workers, built an ingenious five-ton air-conditioner for the trailer. Only cost to the company was \$300 for the compressor.

The electrical department came up with a heating unit fashioned from spare electrical parts.

Men who work on the hot line, where giant mills roll multi-ton ingots of aluminum into sheet and

plate, refurbished several large mirrors to cover an interior wall of the trailer and create a feeling of spaciousness.

A hi-fi enthusiast contrived a sound system for the trailer. Speakers are housed in the trailer ceiling.

The interior of the trailer is sound-conditioned to keep out plant noises through fiberboard and acoustical aluminum sheet installed by other employees. Interior paneling and trim were salvaged from broken production scrap tables.

"As work progressed," says John Larson, plant manager, "the trailer became a symbol of the high regard in which the people here hold each other—a symbol of safety. This heightened consciousness of the importance of safety contributes almost as much to promoting safety as the program itself."

Designed to accommodate 30 employees comfortably for safety training discussions, the trailer is 30 by

—To page 110



Rahr Malting Co. plant, Manitowoc, Wisconsin

## Protecting a multi-million dollar investment

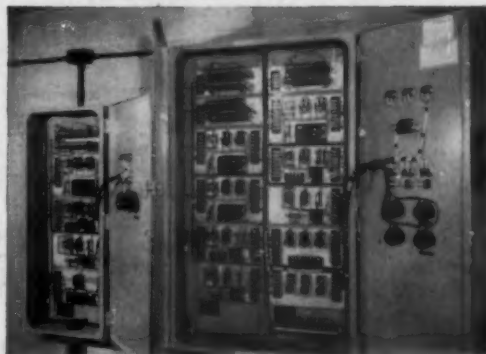
### ***Gamewell Flexalarm System protects one of the world's largest malting plants.***

This huge Rahr Malting Co. plant, pictured above, with its sister plant at Shakopee, Minnesota, supplies approximately 12 percent of the nation's malt. Its widespread facilities demand modern, maximum fire protection. Acutely aware of this need, company officials recently installed a Gamewell Flexalarm System.

All critical areas are protected by either manual coded pull boxes or a sprinkler system. In a matter of seconds, when an alarm is "pulled" or a sprinkler head goes off, the system automatically identifies the fire zone, sounds a general evacuation alarm and alerts the city fire department — all at the same time!

Is your plant this well protected?

Let a Gamewell Survey answer this vital question without obligation. We'll be happy to assist with fire detection engineering of new construction, expansion or modernization, if desired. Write The GAMEWELL COMPANY, 1293 Chestnut Street, Newton Upper Falls 64, Massachusetts. A Subsidiary of E. W. Bliss Company.



This modern, compact control board is the "nerve center" of Gamewell's Flexalarm System, performing a constant automatic fire watch 24-hours a day.

**BLISS**  
  
**FIRST...WHEN SECONDS COUNT**

# PERSONALS

news of people in safety  
and related activities

DOUGLAS H. K. LEE, M.D., has been appointed chief of the research headquarters of the Occupational Health Program, Public Health Service, U. S. Department of Health, Education, and Welfare, at Cincinnati, Ohio. He will direct technical research and field studies of occupational health problems and professional and technical consultation service to state agencies, labor, and industry.

Prior to his association with the Public Health Service, Dr. Lee had been in charge of the research program of the Quartermaster Corps, Department of Army. Previously, he was dean of the Faculty of Medicine and head of Department of Physiology at the University of Queensland in Brisbane, Australia, and later on the faculty at Johns Hopkins University.

He has also served as consultant to the Food and Agriculture Organization of the United Nations, the Bureau of Dairy Industry of the U. S. Department of Agriculture, and the U. S. Department of Defense. In addition to the United States and Australia, his investigations have covered New Guinea, Malaya, Venezuela, and India.

Born in Bristol, England, Dr. Lee received his education in England and Australia. A graduate of the University of London and the University of Sydney, he holds degrees in medicine and tropical medicine. He is the author of numerous publications.

RICHARD S. JOHNSON has been appointed supervisor of industrial hygiene for Norton Company, Worcester, Mass. Mr. Johnson joined Norton in 1957 as an industrial hygienist. He is a graduate of Clark University and has taken special courses at Worcester Junior College and Colby College of Waterville, Me.



Charles Wolff

CHARLES WOLFF recently joined the National Safety Council as staff representative for the Cement, Quarry, and Mineral Aggregates and Glass and Ceramics Sections. In addition to his sectional duties, he will serve as an instructor in the Safety Training Institute.

Wolff was graduated from the University of Illinois with a degree in civil engineering. He worked for the Cook County, Illinois, Highway Department for one year as an engineering draftsman, then joined the safety engineering staff of Hartford Accident and Indemnity Co. In 1952 he was made assistant to the managing director of the American Society of Safety Engineers.

FRANK A. WALKER, of Liberty Mutual Insurance Company, was elected president of the Connecticut Safety Society, Inc., during the group's May meeting.

Mr. Walker, who is senior safety engineer for Liberty in Fairfield County, succeeds Kenneth L. Stebins, safety director for Lycoming Division.

Other officers for the 1960-61 term are Roy N. Johnson, Armstrong Rubber Company, West

Haven, vice-president; Charles A. Wooding, Wallingford Steel Company, manager; James A. Ehlers, Lycoming Division of Avco, secretary; and Marcel A. Lamoureux, Indemnity Insurance Company of North America, Hartford, treasurer.

Serving as directors are Frederick M. Rux, Hartford Electric Light Company; Henry M. Bradley, Manning, Maxwell and Moore Company, Stratford; Richard Ford, Liberty Mutual Insurance Company, and John P. Turner, Shelby Mutual Gas Company.

CLYDE ZAMJAHN, personnel manager for Waukesha Foundry Company, Waukesha, was elected president of the Wisconsin Council of Safety at the annual meeting held June 24 at Elkhart Lake. He succeeds Walter W. Lindemann of Janesville.

Other officers elected were:

General Vice-President: Frank Carney, Fred Rueping Leather Co., Fond du Lac.

Industrial Vice-President: Murdoch Pryor, Allen Bradley Co., Milwaukee.

Traffic Vice-President: M. C. Olsen, Hardware Mutuals, Stevens Point.

Membership Vice-President: Dorr Snoyenbos, AC Spark Plug Div., General Motors Corp., Milwaukee.

Secretary: James Reilly, Cutler-Hammer, Inc., Milwaukee.

Treasurer: James Franey, U. S. Rubber Co., Eau Claire.

R. W. Gillette continues as executive director.

WILLIAM A. CAVENAUGH has been appointed safety director for the Charlevoix, Mich., plant of The Budd Company. He was formerly with Kindy Optical Company, Detroit, as senior safety engineer. Previously he had been safety engineer at the Milwaukee plant of Cutler-Hammer, Inc., and assistant safety manager for Caterpillar Tractor company, Peoria, Ill.

Mr. Cavanaugh is a member of the Veterans of Safety, the Greater Detroit Safety Council, National Safety Council, Industrial Relations Association of Detroit and the American Society of Safety Engineers.



# the answer to industrial weed problems



SECURITY FENCE LINES



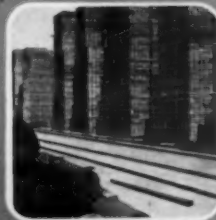
OUTDOOR STORAGE AREAS



RAIL SIDINGS



PETROLEUM INSTALLATIONS



LUMBER STORAGE AREAS

*any man can weed-proof 10,000 sq. ft. in ten minutes*

*with* **UREABOR<sup>®</sup>**

This is the weed killer that's setting new standards for big economy with maintenance men from coast to coast. During the past six years, users have proved that, for low cost, safety, effectiveness... ease of application... UREABOR can't be beat!

Here is the dry granular weed-killing material that is always ready for you to use. There's nothing to mix — no water to haul. To destroy unsightly and hazardous weeds and grasses for a full season, you'll only use 1 to 2-lbs. per 100 sq. ft. That's because UREABOR combines the plant-destroying powers of *two* proven herbicides to

give both a quick kill *and* a long-lasting control.

A special spreader is made to apply UREABOR uniformly and fast at low rates. Its low-cost does not reflect the tremendous value of this spreader to any user of UREABOR since it enables a man to weed-proof any area at the rate of a thousand feet per minute! If you have a weed problem, we want you to have the full story about UREABOR weed killer. Write today for details and name of a near-by distributor.

**USBORAX** 

UNITED STATES BORAX & CHEMICAL CORPORATION, Agricultural Sales Dept., 630 Shatto Place, Los Angeles, California

# The World's largest display of safety products & equipment

## ... the Exposition of the National Safety Congress

... is your opportunity to see the greatest collection of safety devices, equipment, ideas and aids ever assembled under a single roof! Plan now to take some time to visit all three floors of the exhibit area. It will be time well spent — and probably well repaid!

*The Conrad Hilton Hotel*  
*North & South Exhibition Halls*

Second and Third Floors

*Open Daily*

8:30 A.M. to 5:30 P.M.

*Closing Thursday*

October 20, 5:30 P.M.

Program meetings will continue through  
Friday morning, October 21

### IF IT'S FOR SAFETY . . .

You'll find it in the big show in the Exhibition Hall of the Conrad Hilton Hotel. Since 1916 the Safety Exposition has been a big part of each National Safety Congress.

And safety, it should be remembered, includes not only accident prevention, but also fire protection, occupational hygiene, first aid, and sanitation maintenance. Years of research and actual experience have

### Introducing . . . . .

- 40 years  
Mine Safety Appliances Co.
- 39 years  
Stonehouse Signs, Inc.  
Sutry Mfg. Co., Inc.
- 35 years  
American Optical Co.  
Elliott Service Co., Inc.
- 34 years  
Patent Scaffolding Co., Inc.
- 33 years  
Davis Emergency Equipment Co., Inc.  
Lehigh Safety Shoe Co.  
Standard Safety Equipment Co.
- 32 years  
Metropolitan Life Insurance Co.  
Pulmosan Safety Equipment Co.  
Safety First Shoe Co.  
Salisbury, W. H. & Co.
- 31 years  
Best, Alfred M. Co., Inc.  
Chicago Eye Shield Co.  
Gro-Cord Rubber Co.  
Willson Products Division,  
Ray-O-Vac Co.
- 30 years  
Protectoseal Co.
- 29 years  
Buhrke, R. H. Co.
- 28 years  
Bullard, E. D. Co.  
Hy-Test Safety Shoe Div.,  
International Shoe Co.  
Kidde, Walter & Co., Inc.
- 27 years  
American LaFrance Corp.  
Iron Age Safety Shoe Div.  
H. Childs & Co., Inc.
- 26 years  
Industrial Gloves Co.  
Safety Clothing & Equipment Co.
- 24 years  
Columbus McKinnon Chain Corp.  
Dockson Corp.  
Junkin Safety Appliance Co., Inc.  
Justrite Mfg. Co.  
Keystone View Co.  
Milburn Co.
- 23 years  
Kimball Safety Products Co.  
Martindale Electric Co.  
Packwood, G. H. Mfg. Co.  
Rose Mfg. Co., Inc.  
Wheeler Protective Apparel, Inc.

produced a wide variety of products and services that make safety effort more effective. Without many of them, industrial operations would be seriously handicapped.

Increasing safety and health problems of greater fire risks have accompanied much of industry's development. The chemical and atomic phases of progress have stimulated the demand for greater protection.

Safety codes and standards have become more exacting. The safety equipment industry has kept abreast of these developments and cooperated with advisory and regulatory bodies in building higher standards.

A warm welcome awaits you at the Exposition. You'll find the exhibitors cordial and helpful. And besides, you'll meet fellow safety men you'd otherwise miss during Congress Week.

## the Exhibitors at the 1960 National Safety Congress and Exposition . . . old faces and new

22 years  
McAn, Thom Safety Shoe Div.  
Schrader's, A. Son Div.,  
Scovill Mfg. Co., Inc.

21 years  
Aetna Casualty & Surety Co.  
Ampco Metal, Inc.  
Ansul Chemical Co.  
Bausch & Lomb Optical Co.  
Browne, Stewart R. Mfg. Co.  
Karel First Aid Supply Co.  
Legge, Walter G. Co., Inc.

20 years  
Hild Floor Machine Co.  
Sellstrom Mfg. Co.

19 years  
Acme Protection Equipment Co.  
Insto-Gas Corp.  
Medical Supply Co.  
Onox, Inc.

18 years  
Cunningham, M. E. Co.  
Emerson, J. H. Co.  
Surety Rubber Co.

17 years  
American Chain & Cable Co., Inc.  
General Fire Extinguisher Corp.  
Williams Jewelry & Mfg. Co.

16 years  
Klein, Mathias & Sons  
United States Safety Service Co.  
Watchemoket Optical Co.

15 years  
Chance, A. B. Co.  
Marsh & McLennan, Inc.  
Occupational Hazards  
Scott Aviation Corp.  
Taylor, S. G. Chain Co.

14 years  
McDermott, Julian A. Corp.  
Miller Equipment Co., Inc.  
Positive Safety Mfg. Co., The  
Randolph Laboratories, Inc.  
Stephenson Corp.

13 years  
Bashlin, W. M. Co.  
Racine Glove Mfg. Co., Inc.  
Rockwood Sprinkler Co.  
Welsh Mfg. Co.

12 years  
American Allsafe Co.  
Edmont Mfg. Co.  
Jomac, Inc.  
Porto-Clinic Instruments, Inc.

11 years  
Advance Glove Mfg. Co.  
Alan Wood Steel Co.  
Dow Corning Corp.  
Fendall Co.  
Pac-Kit Co.  
Union Wire Rope Corp.

10 years  
Chemican Corp.  
Detex Watchclock Corp.  
Fyr-Fyter Co.  
Institute of Industrial Launderers  
Micro-Switch, a Div. of  
Minneapolis-Honeywell Regulator Co.  
Osborn Mfg. Corp.

9 years  
Frommelt Industries  
The Globe Co., Grip-Strut Div.  
Haus of Krause  
Hygiene Research, Inc.  
Interstate Rubber Products Corp.  
Jackson Products, Air Reduction Sales  
Co., a Div. of Air Reduction Co., Inc.  
Jones & Co.  
Kelley Paint Co.  
Kunz, J. Glove Co.  
Lowery Brothers Co., Inc.  
Maico Electronics, Inc.  
Minnesota Mining & Mfg. Co.  
Safety First Products Corp.  
Safety Tower Ladder Co.  
Stop-Fire, Inc.

8 years  
Boyer-Campbell Co.  
Haws Drinking Faucet Co.  
Newco Mfg. Co., Inc.  
Prairie State Products Co.  
Safety Box Toe Co.  
Wagner Sign Service, Inc.

7 years  
Beryllium Corp.  
Bethlehem Steel Co.  
Fine Organics, Inc.  
Petersen Engineering Co.  
Pioneer Rubber Co.  
Radiator Specialty Co.  
U-C Lite Mfg. Co.

6 years  
Akron Brass Mfg. Co., Inc.  
American Biltrite Rubber Co.  
Brossard, Lester L. Co.  
Charleston Rubber Co.  
Fibre-Metal Products Co.  
Ford Motor Co.  
Knapp Bros. Shoe Mfg. Co.  
National Medical Supply Co.

Riegel Textile Corp.  
Sarole, Inc.  
Sawyer-Tower, Inc.  
Swivelier Co., Inc.  
Tect, Inc.  
Wilson Rubber Co.

5 years  
Chrysler Corp.  
DeWalt, Inc.  
Glendale Optical Co.  
Jones & Laughlin Steel Corp.  
Notifier Corp.  
Putnam Rolling Ladder Co., Inc.  
Safeguard Mfg. Co.  
Searjeant Metal Products Inc.

4 years  
American Industrial Safety  
Equipment Co., Inc.

Antrex Corp.  
Clark, J. R. Co.  
Eagle Mfg. Co.  
Elkhart Brass Mfg. Co., Inc.  
Grinnell Co., Inc.  
Halperin, A. E. Co.  
Progress Industries, Inc.  
Speakman Co.  
Titmus Optical Co., Inc.  
United States Rubber Co.

3 years  
American Optometric Assoc.  
Auto-Crat Mfg. Co.  
Campbell Chain Co.  
Dow Chemical Co.  
Eastern Metals of Elmira, Inc.  
Federal Sign & Signal Corp.  
Fyrepel Products, Inc.  
Industrial Acoustics Co.  
McKay Co.  
Nichols Engineering Co.  
Oxy-Gear, Inc.  
Portable Light Co., Inc.  
Saf-T-Boom Sales & Services Corp.

2 years  
Clark, David Co., Inc.  
Dietz, R. E. Co.  
Globe Industries, Inc.  
Hopfeld Mfg. Co.  
Lawter Chemicals, Inc.  
Meyer Machine Inc.  
National Chemsearch Co.  
Oxygen Equip. & Service Co.  
Stephen-Williams Co.  
Switzer Brothers, Inc.  
Zenith Radio Corp.

1 year  
Air-Shields, Inc.  
Alim Corp.  
Bacharach Industrial Instrument Co.  
Beam's Mfg. Co.  
CTL Co., Inc.—Lummis Mfg. Co.  
Draeger Oxygen Apparatus Corp.  
Falcon Alarm Co.  
Goodrich, B. F. Footwear Co.  
Granet Corp.  
Ohio Chemical & Surgical Equip. Co.  
Record Industrial Co.  
Wamsutta/Pacific Industrial Fabrics

## EDUCATIONAL EXHIBITORS

Inter-American Safety Council, Inc.  
National Safe Boating Assn.  
National Society for the Prevention  
of Blindness  
President's Committee on Employment  
of the Physically Handicapped  
U. S. Forest Service  
U. S. Department of Health,  
Education & Welfare

# VOICE OF THE READER

Let's have your view on current topics. You don't have to agree with us.

## Mirror Writing

BALLARDVALE, MASS. On page 93 of the July 1960 NATIONAL SAFETY NEWS under "7 Fatal Facts on Off-Job Accidents" you state "86 per cent of all accidental deaths resulted from non-work accidents."

Using your figures below of "13,800 killed on the job" and "29,800 killed off the job" my slide rule says:

$$\frac{29,800}{29,800 + 13,800} = 68\%$$

Did someone turn the number around, or look at it in a mirror, or is some data missing?

—ROBERT B. HATTON, *Plant Engineer, Reichhold Chemicals, Inc.*

No, we didn't use a mirror, but maybe we should have. The figure is actually closer to 85 per cent than 86.

Reader Hatton's slide rule is accurate, but he fed the wrong figures into it.

"Non-work" is the key word here. This means all accidental deaths—

women, children, old folks, and the unemployed—other than work deaths. "Off the job" means *workers* killed off the job. This is a common misunderstanding, and we're glad for a chance to point it out.

## Confusing Statistics

PASADENA, TEXAS. The statistics in the June article "Why Be Concerned About Non-Work Accidents Beyond the Plant Gate" are somewhat confusing.

Should that part of the sentence of the first paragraph on page 3 "nearly as many lives are lost each year in accidents in the home alone . . ." have read: "nearly as many lives are lost each year in off-the-job accidents as were lost in battle during the three years of the Korean War?"

—LEE S. BUENGER, *Diamond Alkali Co., Deer Park Plant*

Mr. Buenger has made a valid point. Actually it would be a more effective

comparison to use the off-the-job figure of 29,200\* than the home figure of 26,000.

The first paragraph on page 3, however, refers to the short item on page 2 about Joe reaching too far from a ladder. Since this was a home accident, the author chose to use home accidents in the comparison in the first paragraph, and treat off-the-job in the second paragraph.

\*The author did not have this year's figures when the article was written.

## The Diary

GARDNERS, PA. It is fiction, but I hope many men and women in safety work put it to actual practice. I am referring to the *Diary of a Safety Engineer* by Bill Andrews in the June issue, "The Record and Morals."

We need more articles like this one to point out to the people in industry that playing the game square applies to all areas of life. It does not mean just doing good during the hour or two we spend in our church or synagogue each week.

Your magazine presents many other fine articles. Keep up the good work.

—CHARLES E. TRUMP, *Personnel Director, The C. H. Musselman Co., Gardners, Pa.*

## Man tackles machine and comes away

### Str-r-RIPPED

Man, right, and Machine, below.

The accompanying photos, from the Gypsum Association *Safety Bulletin*, don't require much explanation. A man presses against an unguarded, revolving shaft on a double end motor; shaft catches shirt and denudes man; man steps back and (fortunately) somehow manages to escape injury.

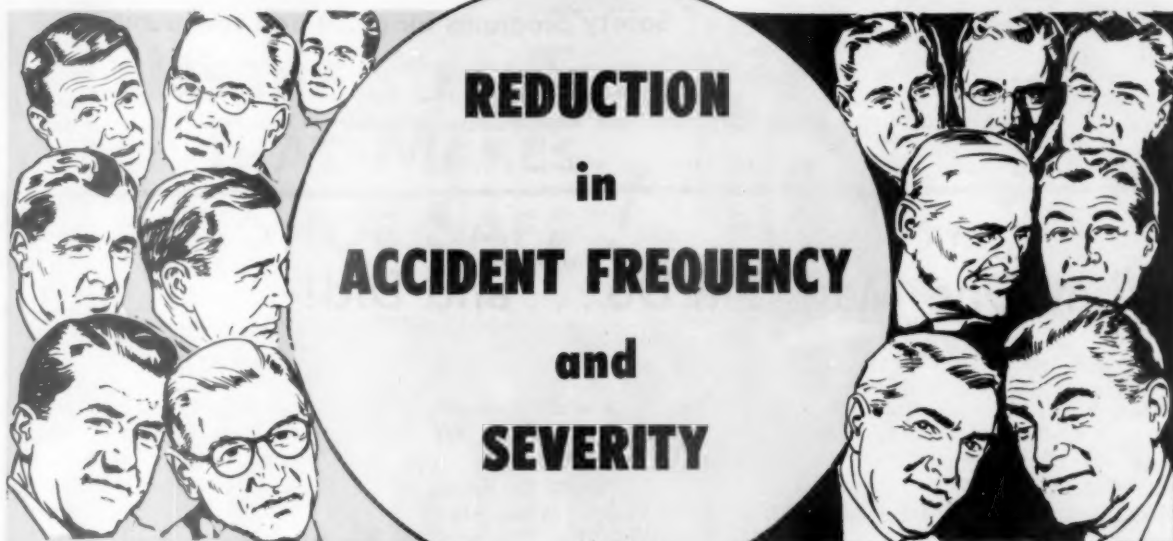
Revolving shafts, couplings, and other parts, no matter how smooth, are dangerous. Have you checked for such exposed equipment recently?





MODERN SAFETY PERSONNEL  
DEMAND

PROGRESSIVE MANAGEMENT  
DEMANDS



# Scott

## Respiratory Protective Equipment is the Answer

Today more than ever before, hazardous atmospheres present one of the greatest causes of accident frequency and severity. Technological advances in process industries create atmospheric unknowns that cause neurological and pathological damage.

Scott builds respiratory protective equipment to meet every type of breathing hazard. Whether the atmosphere is highly toxic, or not immediately injurious to health; whether the wearer must be

protected for a short-duration maintenance job, or for a full day — there is Scott equipment to insure his breathing safety.

The Scott Aviation Corporation is a pioneer in, and one of the world's foremost producers of breathing equipment for aviation and industry. If you have accident problems that result from respiration of toxic atmospheres — let us give you the answers. Put your problem in the hands of experts.



Scott  
Inhalator

Scott High-  
Pressure  
Hose Line  
Air-Pak



Scott  
Respirator



Scott  
Air-Pak



Export: Southern Oxygen Co., 250 West 57th Street, New York 19, N. Y.  
Canada: Safety Supply Co., Toronto — Branches in Principal Cities

SCOTT AVIATION CORPORATION • 211 Erie St., Lancaster, N. Y.

Please send me the following literature and prices:

- ☐ Scott Air-Pak Brochure, 6-pages, 2-color. ☐ Scott Respirator Brochure, 6-pages, 2-color.  
☐ Scott Inhalator Brochure, 6-pages, 2-color.

NAME \_\_\_\_\_ TITLE \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_



# OFF THE JOB

Safety programs for plant and community

By **HARRY C. JOHNSON** NSC Staff Representative, OTJ Safety Committee

## What One Man Can Do . . . and Did!

Gene Wasserman, of Wexler Construction Company, Inc., Newton Highlands, Mass., a member of the NSC Construction Section's executive committee, conducted a one-man, three-week safe driving campaign that, like the stone cast into a pond, is spreading waves of enthusiasm and imitation far beyond the original splash. Mr. Wasserman's project shows what an individual can do if he feels deeply dedicated to safety.

Primarily the chief cost accountant for the company, he is also safety director of the firm. Prior to the recent Fourth of July week end, Mr. Wasserman decided to remind his fellow employees about their safety responsibilities.

His correspondence tells the story of what happened in the first three weeks of his continuing campaign:

*This is the safety letter he first sent to the company's workers.*

June 29, 1960

Dear Fellow Employee:

On Independence Day, as well as every other day, all of us are aware that we are working in an industry that holds safety to be of prime importance on every construction project.

We are neither the first company, nor the only company, that recognizes the great importance of safety in our work. Safety, however, has no quitting time. On the job, or off the job, it is up to you to prevent accidents. We all have a personal responsibility to stop the slaughter on our highways, too.

We are therefore appealing personally by letter to every one of

our 400 employees to use the same care on the highway that he uses on the job to prevent accidents.

Heed the warnings of the Registrar of Motor Vehicles in your state and in your newspaper. Cooperate with the police. Drive safely. Observe all traffic rules and speed regulations. Enjoy yourself safely on this 4th of July week end.

Gene Wasserman

*A copy of the safety piece with a covering letter brought this response from the state's registrar of motor vehicles.*

July 6, 1960

Dear Mr. Wasserman:

Thank you for your letter of June 29, and the enclosed copy of the letter to all your employees. I think

this is a wonderful idea and certainly appreciate your cooperation.

Clement A. Riley,  
Registrar of Motor Vehicles

*Wasserman wrote a thank-you to Riley and got in several additional plugs for highway safety and his company's role in promoting it.*

July 7, 1960

Dear Mr. Riley:

Thanks for your approval of our action in extending our safety program to include highway safety for our employees. The publicizing of this effort by the *Boston Herald* was public spirited and came as an unexpected and pleasant surprise. I hope other companies will join us.

We intend to continue our own

—To page 60



Gene Wasserman

IT'S THE STEEL TOE  
THAT MAKES  
A SHOE SAFE !

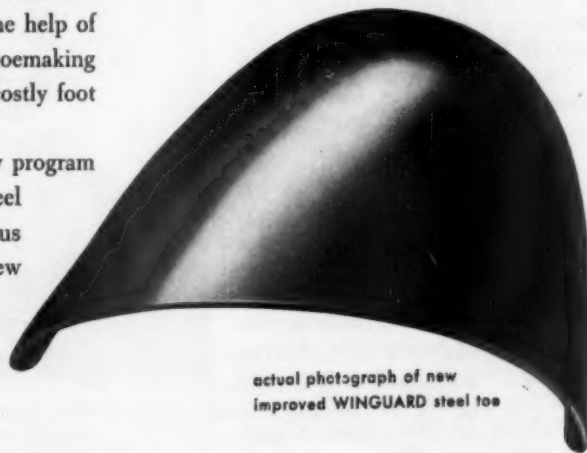
don't

— *RELY ON  
REGULAR SHOES!*

... they offer no more protection against falling objects than a pair of socks.

The protection of industrial workers' feet is a joint enterprise. Only by the complete awareness of existing industrial foot hazards can the conscientious safety engineer, with the help of his safety shoe suppliers and their vast army of shoemaking technicians, stem the increasing tide of painful and costly foot injuries.

Safety Box Toe Company's part in this vital safety program is to develop and produce the very finest quality of steel toes. We offer your safety shoe supplier nineteen various styles of steel toes for his selection, including the new improved WINGUARDS... the latest development in steel toe protection.



actual photograph of new  
improved WINGUARD steel toe

**Safety Box Toe Company**  
812 STATLER BUILDING • BOSTON

—From page 58

program consistently, and not only on the holiday week ends. Today, on a safety inspection tour of our Derby Academy job in Hingham, I was amazed to learn from Headmaster McEachron that ordinary week end accidents and fatalities are not much fewer than those of holidays.

Through our Workmen's Compensation underwriters and by personal contact, we plan to get many other companies to join us. Our letters were very favorably received by our employees. Copies are being made available to other companies for their own use, together with help in planning and expediting a program. My own personal help is available evenings without pay, to any company that is seriously interested in so extending its safety program.

Gene Wasserman

*Wasserman clipped the Herald story and showed his gratitude by this letter to the newspaper's city editor.*

July 7, 1960

City Editor,  
Boston Herald-Traveler Corp.

Thank you for the recent holiday article publicizing the extension of our safety program to include highway safety. It is our earnest hope that many other companies will join us in this effort, and that other Boston newspapers as well as the *Herald-Traveler* will cooperate in the same public spirited manner by publicizing their efforts.

Thank you again for your cooperation.

Gene Wasserman

*Then this letter arrived at the NSC headquarters for Carman Fish.*

July 12, 1960

Mr. Carman Fish:

The construction industry today has an opportunity for public service that should not be neglected. Among all industries, it is in a peculiarly favorable position to fulfill a responsibility to join public officials in a determined effort to cut down the shameful slaughter on our highways.

This can best be done by the extension of company safety pro-

—To page 105

## "Safety in Community Living Month" Proclaimed by Pennsylvania Governor

### Citizens urged to begin year-round effort

PENNSYLVANIA'S Gov. David L. Lawrence has proclaimed September as "Safety in Community Living Month."

In his proclamation, he urged Pennsylvanians to extend their safety efforts beyond September by planning and initiating year-round accident and fire prevention programs.

The September observance is sponsored by the Pennsylvania Junior Chamber of Commerce and The Bell Telephone Company of Pennsylvania and is supported by the regional safety councils at Pittsburgh, Philadelphia, and in the Lehigh Valley.

The idea for the Safety in Community Living Month had its beginning in the fall of 1959 when the Pennsylvania Jaycees were looking for help with their safety program. In the telephone company they found a friend who had valuable experience in the field of community safety and a program which would enrich their own. The two organizations decided to combine their efforts and carry the safety message to the grass roots.

Jaycee Chapters throughout the state were encouraged to take advantage of programs available from the telephone company and 77 community relations committees of the company were geared up to work with the Jaycees on all community safety projects. The governor's proclamation gave the program impetus and along with it came the support of regional chapters of the National Safety Council.

The Bell Telephone Company of Pennsylvania and the Pennsylvania Junior Chamber of Commerce, in addition to sponsoring the program, will give Certificates of Commendation to all organizations who comply with the governor's request "to embrace this opportunity during the month of September to plan and initiate a continuing, year-round Community Safety Program to make the Commonwealth of Pennsylvania the safest place in the nation in which to live, work, and play."



Standing: Harry H. Verdier, executive director, Philadelphia Safety Council; Harry Brainerd, Pittsburgh, manager of the Western Pennsylvania Safety Council; O. D. Shipley, Pennsylvania commissioner of traffic safety; G. R. Whitney, New Cumberland, district director, National Safety Council; Harold A. Seward, secretary-treasurer, Lehigh Valley Safety Council, Bethlehem; Sam McKay, chairman of the board of governors of the Philadelphia Chamber of Commerce Safety Council and safety director of The Bell Telephone Company of Pennsylvania.

Seated: E. F. Tesnar, Jaycee director of the telephone company's safety program and public relations supervisor; Governor Lawrence; and George H. Feakins, general traffic manager, Central Area.



## Safety Got a Shot, Too

—From page 25

every accident occurring in their departments was investigated in detail. When all factors leading to the accidents had been evaluated, the foremen determined what corrective action had to be taken to prevent the recurrence of the accidents.

Other phases of sound accident prevention were stressed. Records of accidents by departments were expanded so attention could be given to the chief accident causes. For example, installation of machine guards to protect employees from moving machinery was considered and the plant engineering department developed several guards where their installation at first seemed impractical. Monthly accident rates were published not only by departments, but by supervisors to pinpoint areas needing attention. Supervisors began investigating even the so-called minor accidents. The compulsory wearing of eye protection was readily accepted by employees. Management representatives participated in shop activities thereby stressing the importance which it places on safe working practices, and its concern over the safety of employees.

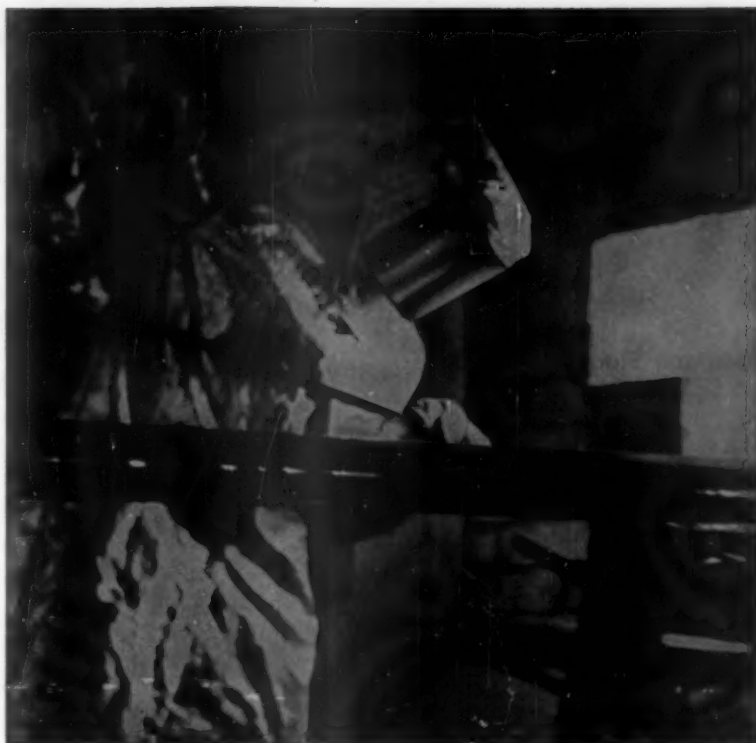
A conscientious program of plant bulletin board posters, departmental accident record boards, special clubs such as the Wise Owl Booster Club, safety department representations at the weekly general foremen's meetings, and the Golden Shoe Club, help keep the value of safety and accident prevention in the minds of all employees. One employee, handy with a paint brush, played a part in personalizing safety posters throughout the plant, thereby adding to the effectiveness of the poster campaign.

## Superhighway Accidents

Seven out of 10 turnpike accidents involve only one car, the National Safety Council reports.

Of the three out of 10 accidents involving more than one motor vehicle, most are rear-end collisions or sideswipe accidents.

From *Accident Facts—*  
1960 Edition.



## NEW HEAT REFLECTIVE FABRIC WORKS THREE TIMES LONGER!

Durability has been increased up to three times with Type 75 "Scotch-Shield" Aluminized Fabric—and safety and savings are greater than ever. Intensive laboratory and field tests prove dramatically superior performance over the original Type 71 Fabric!

"Scotch-Shield" Fabric's spatter resistance and ability to reflect 90% of radiant heat keeps hot spot workers cool, safe, efficient—lets them perform their work quickly, with important savings for you.

Results of performance tests available for your inspection. Send coupon for reports.



### MINNESOTA MINING AND MANUFACTURING COMPANY



... WHERE RESEARCH IS THE KEY TO TOMORROW

Minnesota Mining and Manufacturing Company, Dept. RBY-90, St. Paul 6, Minn.  
Please send me performance reports, complete information, and free samples of new "Scotch-Shield" Aluminized Fabric.

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# OCCUPATIONAL HEALTH



## Abstracts of current literature on Occupational Hygiene, Medicine, and Nursing

By J. T. SIEDLECKI  
Industrial Hygienist, NSC

### Roentgen Study Of Silicosis

"Roentgen Study of Silicosis in Ceramic Workers Who Have Received McIntyre Aluminum Powder." By J. W. G. Hannon, M.D., P. G. Bovard, M.D., and L. R. Osmond, M.D. *Industrial Medicine and Surgery*. Vol. 29, No. 6. June 1960. Pp. 286-289.

THERE HAS been considerable discussion among various investigators whether aluminum therapy is of any value in the prevention of silicosis in workmen exposed to high concentrations of silica dust and whether aluminum therapy does prevent the usual progression of established silicosis.

The authors in this paper report a study of a program started in 1944 in a plant that manufactured ceramic sanitary bathroom fixtures and where the average dust exposures were seven million particles per cubic foot with a quartz content of 25 to 30 per cent. At the beginning of this study many of the 132 workers involved had long exposure to silica and showed radiological evidence of silicosis. Aluminum therapy treatments consisted of six-minute inhalations once a week.

The authors point out that plant management had put in engineering control measures to minimize the hazard of airborne silica dust, but in spite of these controls, new silicotics were being developed each year. For this reason plant management decided to inaugurate a program of aluminum therapy and prophylaxis. The authors conclude:

- "1. The inhalation of McIntyre Aluminum Powder can help protect workers from silicosis for 15-plus years.
- "2. The use of McIntyre Aluminum Powder will prevent or decrease the rate of severity of the usual progression of ceramic silicosis.
- "3. There was no evidence that the

inhalation of McIntyre Aluminum Powder was harmful in any manner to workmen who took this type of additive prophylaxis in the prevention of silicosis."

### Asbestosis, Carcinoma Of the Lung

"Asbestosis and Carcinoma of the Lung." By J. Anderson, M.D., and F. A. Campagna, M.D. *Archives of Environmental Health*. Vol. 1, No. 1. July 1960. Pp. 27-32.

THE AUTHORS report on a case of asbestosis associated with carcinoma of the lung. The literature is also reviewed, and it is indicated that this is the 24th reported case with complete autopsy findings.

Many investigators previously have felt that asbestosis predisposes to lung carcinoma. Hueper of the National Cancer Institute reported that 127 cases of asbestosis carcinoma of the lung are on record. The authors in this paper have indicated that, in their case, the patient had been a heavy smoker until five years before his final illness.

They also indicate that two other investigators commented on smoking and their patients had been heavy smokers. They suggest that any further cases of asbestosis with or without tumors be reported with careful attention to other factors, such as smoking. It is only when all the facts are available that an evaluation can be made of the relationship between asbestosis and lung carcinoma.

### Providing Suitable In-Plant Environment

"A Practical Method of Providing a Suitable In-Plant Environment." By K. E. Robinson. *Industrial Medicine and Surgery*. Vol. 29, No. 6. June 1960. Pp. 233-237.

THE AUTHOR indicates one must have a basic understanding of how

a worker reacts to his environment before different methods of heating and ventilating can be evaluated to obtain a satisfactory environment in a plant.

He discusses the A.S.H.V.E. Comfort Chart for still air and effective temperature chart. Unfortunately, these charts are not too well illustrated in this journal. However, they can be found in the *Manual on Ventilation* published by the American Conference of Governmental Industrial Hygienists. With these charts, one can determine whether or not plant conditions are within a temperature zone considered comfortable.

The author also describes why many heating systems fail to provide satisfactory environmental conditions in industrial plants. The author discusses with illustrations how to control the environmental conditions in a plant having operations such as heat-treating operations involving considerable quantities of radiant energy.

He stresses that satisfactory installations must be based on the reaction of the individual to his environment rather than supplying the heat loss based on a calculated B.T.U. loss from the building.

### Arsenic: Chronic Human Intoxication

"Arsenic: Chronic Human Intoxication." B. D. Dinman, M.D., D.Sc., *Journal of Occupational Medicine*, Volume 2. Pp 137-141. March 1960.

THE AUTHOR reviews manifestations of chronic arsenic intoxication in humans, giving the diagnosis, therapy, and prognosis. He indicates that occupational exposure to arsenic and its compounds has rarely produced acute and systemic intoxication among exposed workers. Acute cases of arsenic intoxication

—To page 131



At Mount Rushmore National Memorial in South Dakota small fissures in the sculptured faces of Washington, Jefferson, Lincoln and Roosevelt are being sealed with granite dust and white lead. Though the granite sculpture is estimated to last for thousands of years, this preventive maintenance will keep the surfaces smooth and slow the natural erosion process. The insert shows how workmen are suspended on Union Wire Rope.

## Tuffy is an old hand at new ideas

Whether it's better equipment for drilling deeper oil wells, or doing a "preventive maintenance" job like the one shown above, new needs for slings and wire rope are constantly coming along.

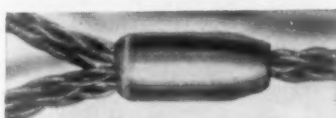
Tuffy meets these needs with products perfectly "tailored" to the job at hand. Products that give the ultimate in working efficiency, safety and long service life — at the ultimate low cost.

In Union research laboratories the quest is continuous for new ideas and new ways of making wire rope and slings. It's been that way for more than 30 years. Out of that research have come such important advances as Tuffy's 9-part machine-braided sling, famous for its unmatched combination of strength and flexibility.

Here are Tuffy "extras" you get at no extra cost



Tuffy's patented 9-part machine-braided fabric is a marvel of strength and flexibility. It makes knotting and kinking next to impossible. If a kink should occur, it's easily smoothed out, leaving no permanent damage.



Tuffy's pressed-on metal ferrule gives the tucked eye splice 100% of fabric strength. It's applied under tremendous hydraulic pressure — and streamlined to eliminate snags that might injure hands and arms.

For products you trust, service you rely on, the man to see is your Tuffy Distributor. Look him up in the Yellow Pages.

**UNION**  **Wire Rope**



**Subsidiary of ARMCO STEEL CORPORATION**

OTHER SUBSIDIARIES AND DIVISIONS: Armco Division • Sheffield Division • The National Supply Company  
Armco Drainage & Metal Products, Inc. • The Armco International Corporation • Southwest Steel Products

**Tuffy Tips**  
— on safe use of  
Slings and Hoist Lines



**Safety in  
Hoisting  
Saves Costly  
Injuries**

During a recent 12 months period, back injuries resulting in lost time totalled 32,643 in one state (California). Lost-time injuries caused by strain or over-exertion: 24,639. A high price to pay—in misery and money—for lifting, pushing and carrying loads.

Proper hoisting equipment, properly used and maintained, is one important answer to this injury problem. It may save your workers disabling accidents, and save you expensive absenteeism and lost production.

### Rules for Safe Use of Hoists

1. Don't let muscles do what a proper size hoist should do.
2. Adequate hoists aren't expensive. With proper slings and hoist lines, they will help a lot in reducing injuries to workers.
3. Use the right sling and hoist line for the job. Tuffy slings and hoist lines are tailored to every need, from the smallest block and tackle to giant cranes and other equipment.
4. Don't assume that all slings are right for all kinds of lifting. Your Tuffy distributor will help you select the right ones.

**FREE!**  
**New Tuffy  
Sling Handbook**



Covers the subject from A to Z. All types, weights, dimensions, rated loads and other data for slings and sling fittings. Write Union Wire Rope Corporation, 2224 Manchester Ave., Kansas City 26, Mo. Specialists in high carbon wire, wire rope, braided wire fabric and stress-relieved wire and strand.



# SMALL BUSINESS and ASSOCIATIONS

By **RAYMOND C. ELLIS, JR.,** and **JOHN T. CURRY**

Small Business Program Staff, National Safety Council

## Association Safety Award Winner Announced



Committee of Judges meets in Washington, D. C. on June 9, 1960. From left to right: John Convery, National Association of Manufacturers; Robert Gilmour, Utica Mutual Insurance Company; Jay Judkins, U. S. Department of Commerce and committee chairman; Ray Ellis, Jr., National Safety Council; Glenn Sanberg, American Society of Association Executives; James Low, Chamber of Commerce of the U. S.; and Robert Hagopian, Association of Casualty and Surety Companies.

THE FOLLOWING National Safety Council Association Award winners for 1960 were announced by Jay Judkins, U. S. Department of Commerce and chairman of the Committee of Judges:

Associated Industries of New York State, Inc.  
British Columbia Lumber Manufacturers Association  
Can Manufacturers Institute  
Gray Iron Founders' Society, Inc.  
Greater Chicago Hotel Association  
Natural Gasoline Association of America  
Oil Field Haulers Association, Inc.  
Pacific Northwest Loggers Association  
Portland Cement Association  
The Truck Loggers Association

In a letter of congratulations to the winners, Governor Howard Pyle, NSC president, stated, "Your accomplishment is of particular significance in a year where there was a general increase in accident frequency." The contestants either reduced or held the line in disabling injury experience for their member companies.

The award recognizes the variety and effectiveness of the association safety program. Elements vital to the success of any safety program are reviewed. These include safety organization, services to members, safety publications, safety publicity, and cooperation with safety agencies.

Contrary to previous practice, the Association Safety Awards will not be presented during the National Safety Congress. Presentations will be made at the annual meetings of the winning organizations by officers, members of the Board of Directors, or by a representative of the Council staff. This will permit NSC more effective recognition of the association before its total membership.

## Association Executives Forum of Chicago Cosponsors Workshop

On Thursday, October 20, the Association Executives Forum of Chicago will cosponsor the Safety Workshop session of the Small Business and Associations Division. The meeting will convene at 10:00 a.m. under the chairmanship of Frank Laderer, chairman of the Small Business and Associations Committee of the Industrial Conference, NSC, and director of safety for the Nationwide Insurance Company in Columbus, Ohio. This session will be held in the George Bernard Shaw Room of the Sherman Hotel.

Association executives are urged to attend this workshop where an exchange of safety ideas and materials that worked should make this a most valuable meeting. Sample copies of effective safety bulletins and similar data will be provided in sufficient quantity for distribution to interested participants. Special displays of association program materials will also be in the meeting room.

Following the workshop, the regular luncheon meeting of the Forum will be held. Workshop participants may purchase tickets for the luncheon and remain for a discussion, "The Road Ahead for Private Business," by Arch N. Booth, executive vice president, Chamber of Commerce of the United States, Washington, D. C.

## Association Contributes To Off-the-Job Safety

In a recent survey on what's new among association safety activities, an outstanding report was received on the activities of the Outboard Boating Club of America. Guy W. Hughes, executive director, and M. J. Kaufman, manager of boating



# *New and Revolutionary...* **SLING CHAINS THAT TALK**

The **WARNING RING** on Campbell **SENTRY SLINGS\*** tells you immediately when the sling has been overloaded . . . it elongates visibly . . . and before the chain itself is damaged.

*Your eye can see the difference!*

Ring remains round  
Sling used properly

Ring distorted  
Sling overloaded

New, revolutionary . . . Campbell **SENTRY SLINGS**—fully tested for over a year by foundries, steel fabricators and heavy equipment manufacturers, offer many important advantages. The **WARNING RING** is stronger than the chain itself. Yet it changes shape as the sling is overloaded . . . *before permanent damage occurs*. Repair is quick and easy, with a new **WARNING RING** replaced at the factory. Re-tested and re-certified Sentry Slings are again ready for regular service.

#### **Here's How You Benefit From New SENTRY SLINGS:**

- Safety programs are easier to maintain—with the **WARNING RING's** built-in safety that protects men and material!
- Lower repair costs give larger savings than ever—normally only the **WARNING RING** will need repair!
- Immediate visual evidence of overload means easier inspection—even while sling is in use!

**SENTRY SLINGS**, available in all types, are made from Cam-Alloy steel chain only and are available at no extra cost! All slings carry the Campbell Guarantee and Certificate of Test.



#### **CAMPBELL CHAIN Company**

FACTORIES: York, Pa.; West Burlington, Iowa; Union City, Calif. WAREHOUSES: East Cambridge, Mass.; Atlanta, Ga.; Dallas, Texas; Chicago, Ill.; Portland, Ore.; Seattle, Wash.; Los Angeles, Calif.

\*Patent Applied For

services and education, provided an outstanding display of OBC materials dealing with boating safety and the promotion of "Common Sense and Courtesy Afloat."

This organization annually compiles a study of fatal boating accidents from newspaper clippings and reports from throughout the nation. This study helps to determine the extent and major causes of boating mishaps, enables the OBC to conduct a more effective educational program, and brings the true causes of boating accidents into focus.

Posters and pamphlets are distributed annually, to emphasize safety through boat clubs and at boat shows, summer camps, schools, and resorts. Over one-half million copies of *Outboard Handling* are distributed as part of the "OBC Tool Kit," which is attached to

boats, motors, and trailers manufactured by OBC's sustaining members.

As a major project for 1960, an effort has been made to develop a course in boating education entitled, "Outboard Seamanship Course Kit." This kit includes an instructor's manual and four mimeographed sections containing a course script, outline, and recommendations for conducting a successful instructional program. "An Ounce of Prevention" reprint, posters, and pamphlets supplement this course presentation. Two major objectives of this program are (1) Give newcomers to the sport some understanding of the rudiments of boating. (2) Induce boaters to enroll for more complete and comprehensive courses offered by such organizations as the U. S. Coast Guard.

## Diary of a Safety Engineer

—From page 12

tioned offices and show them the shop as it is (which is not the shop made shiny and put on best behavior by a preannounced inspection tour by the high brass). But, realistically, I can't expect to make this kind of a change in management practice.

No, I have to find some way to bring the feel of the shop with me to the management men.

Maybe, after all, my senior assistant, Lee, has the right idea. He wants me to let him take a small movie camera into the shop with him and record the results of his inspections.

It raises all sorts of problems—management concern about trade secrets, worker and supervision resentment of snooping. But there are places we could handle the objections, and with the film properly edited and backed with a good sound-track commentary, it might do what I want.

The audience for viewing it is ready made—the Management Round Table meets Thursdays at the new Industrial Club just outside the project main gate.

It's worth a try, I think.

## Health Congress to Meet In North Carolina

Representatives of industry, agriculture, medicine, and governmental agencies will gather in Charlotte, N. C., October 10-12, for the 20th Congress on Industrial Health, to be held at the Hotel Charlotte. The congress is sponsored by the American Medical Association's Council on Occupational Health.

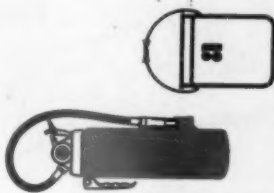
Established in 1938, the council supports safe and healthful working conditions for employees through medical supervision of workers, control of environment, health education, and counseling, according to Dr. B. Dixon Holland, council secretary.

Cooperating sponsors include the Medical Society of North Carolina, North Carolina Governor's Council on Occupation Health, Mecklenburg County Medical Society, and the Greater Charlotte Occupation Health Council.

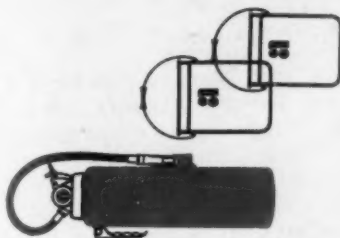


Outboard Boating Club of America "Rules of the Road" poster.

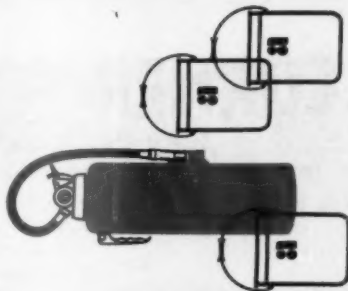
FIRST DEAL: With your purchase of every Ansul Sentry 10 at the regular price of \$66.00 we will give you FREE one 50 lb. pail of Ansul "Plus-Fifty B" Dry Chemical.



SECOND DEAL: Each Ansul Sentry 20 that you purchase at the regular price of \$81.00 entitles you to two FREE 50 lb. pails of Ansul "Plus-Fifty B" Dry Chemical.



THIRD DEAL: Three FREE 50 lb. pails of Ansul "Plus-Fifty B" Dry Chemical will be included with each Ansul Sentry 30 that you buy at \$99.00.



**DEAL:** Because ANSUL wants to acquaint you with the remarkable, sound features of its new SENTRY Dry Chemical Stored Pressure Fire Extinguishers... because training for your people on real fires is an essential part of an effective fire protection program... we've arranged a special, combination deal. Between now and October 1, 1980 when you buy Ansul SENTRY fire extinguishers we will give you FREE our special "training package"—liberal extra quantities of Ansul "Plus-Fifty B" Dry Chemical which you can use in your own fire training program. With each SENTRY 10 we'll give you one 50 lb. pail of "Plus-Fifty B" Dry Chemical; with each SENTRY 20, two 50 lb. pails; and with every SENTRY 30, three 50 lb. pails. Each combination is yours for the price of the extinguisher alone. You can take advantage of any or all of these combination offers as often as you wish, between now and October 1. To do so, call your local Ansul Man (he's listed in the "Yellow Pages") or write directly to ANSUL CHEMICAL COMPANY, Manassas, Virginia.

**ANSUL**

# CONSULTATION CORNER



Questions on accident prevention, fire protection and occupational hygiene are answered by mail. A few are selected for publication

By L. C. SMITH, Industrial Department, NSC

## Explosions in Compressed Air Systems

**Question:** We recently had an explosion in one of our air compressors. Fortunately no one was injured, but we want to prevent a recurrence. Our investigation did not reveal any information that would help us establish the cause of the accident. Have you any information on this subject?

**Answer:** Naturally, it would be almost impossible to say exactly what caused the explosion. However, there are a number of factors that could have been responsible. Consequently, in your case all these factors should be considered.

Such explosions usually result from ignition of a combustible mixture of air and a carbonaceous substance. Lubricating oil often becomes vaporized through overheating of the compressor and these vapors, combining with the oxygen in the air, form an explosive mixture. Excessive heat in the compressor is the usual source of ignition for such an explosion. This heat may be generated in any of the following ways:

1. Improper lubrication causing excessive friction.
2. Lack of cooling water (in the case of water-cooled compressors).
3. Excessive coating of scale or dirt in the water jackets.
4. Leaky discharge valves.
5. Throttling of the air inlet.

Insufficient lubrication of the cylinders may cause overheating. Too much oil will carry over to other parts of the system. Consequently, it is important to use only a minimum amount of proper oil. Only a high grade mineral oil should be used.

The water for cooling a compressor should be dependable and free from scale-forming ingredients, such as dirt, lime, and minerals. If the water supply fails or the supply is

contaminated so as to form scale on the inside of the water jacket, overheating may result.

Leakage of compressor discharge valves is the most frequent cause of overheating and resulting explosions. When valves do not close completely, compressed air returns to the cylinder where it is recompressed and its temperature increased. As the recompression continues, high temperature air, coming in contact with carbon deposits on the inside of the discharge piping, may produce spontaneous ignition of these deposits. Where the valve becomes red hot there is also the possibility of small particles entering the air piping. If there is a combustible mixture of oil vapors in the piping an explosion often results.

Impurities such as dust or other particles in the air are also a cause of overheating. Filters on the intake piping will remove many of these

impurities. However, these filters must be cleaned regularly; otherwise they throttle or restrict the amount of air entering the compressor, causing it to overheat.

Since maintenance of the compressors is important to prevent such explosions, the following procedures should be followed:

1. Compressor valves should be inspected and cleaned at least once every three months. Accumulated water and oil in the air tanks should be blown out at least once a week. Compressors should be completely inspected, cleaned, and repaired at least once a year. Old and worn equipment should be completely replaced.

2. The location of the air intake valve should be located away from all sources of contamination, including flammable vapors of all types, acid fumes, and explosive dusts.

3. Every compressor should be equipped with an alarm as a warning against overheating. One such type is a fusible plug with a whistle alarm.

4. Use only compressor lubricating oils that are recommended by the manufacturer of the equipment and use only the amount recommended. Excessive amounts often lead to trouble.

Proper attention to these points will reduce such explosions to a minimum. Also important to remember is that new compressors in good working order seldom present any problems.

## ACCIDENTS ANONYMOUS

ACCORDING to the latest injury statistics we need a new organization—Accidents Anonymous. It could help keep us around as potential customers for Alcoholics Anonymous, Cigarettes Anonymous, Sin Anonymous, and all other such high type clubs.

The way it works is whenever you feel like an accident stop whatever you're doing, call one of the other members and have a drink together.

It won't be too exclusive a group, unfortunately. Most everyone is eligible for membership. Just a bunch of jokers who learned the hard way.

If you have experience, there are different chapters you can fit into. They accommodate the fingerless, the eyeless, the stub-thumpers, the

winged, the singed, the bruised, mashed and punctured, the warped, the broken, the sliced, the blasted, the extended, and the eroded and corroded. You name your misery. And, there are ladies' auxiliaries in all categories.

Statistics indicate that in the work life of every 100 new entrants (age 14 to 19) into the labor force, we can expect about 152 disabling work injuries. These include 1 death, 6 permanent disablements and 145 temporary total disablements. We ought to do something because you can see that the farm system is clogged with recruits.

How 'bout joining up? You could hardly support a better cause.

ROBERT D. GIDEL





**LITE KNIGHT Safety Shoes**  
*weigh a pound less per pair  
 than ordinary safety oxfords*

- Reduce fatigue • Smart casual look
- Extremely comfortable • Meet ASA specifications
- Resist acids, alkalis, water and soil • Long wearing • Sturdy steel shank

## World's Lightest Safety Shoe

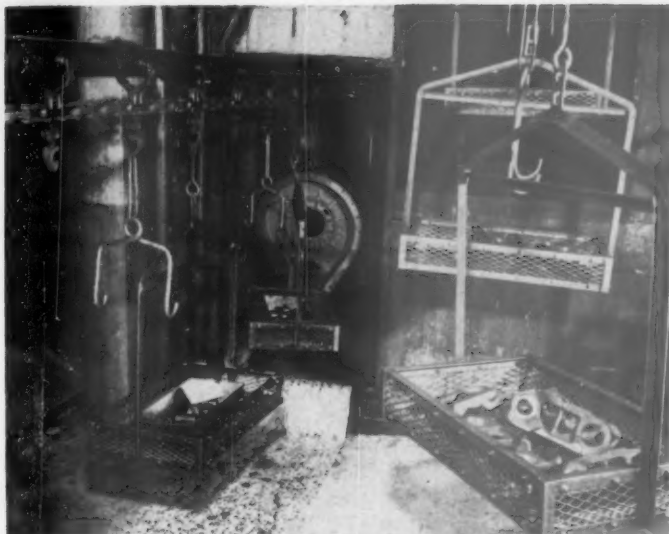
So good looking, so light, so comfortable . . . perfect for men who avoid ordinary safety shoes. New construction permits use of lightweight materials.

Uppers are of brushed pigskin in gray or brown, treated with KEMI KLAD to keep that soft casual look. Appearance is easily renewed by a quick brushing with a wire brush or ordinary sandpaper. And the natural breathe-ability of pigskin means extra ventilation for healthier feet. Thick, springy, oil-resistant neoprene Nitrocrepe soles cushion every step.

Workers really go for the good looks and comfort of LITE KNIGHT Safety Shoes. This enthusiastic acceptance by your men will assure the success of your safety program. For the name of your nearest jobber, write to:

**HAUS OF KRAUSE . . . Rockford, Michigan**

*Industrial jobbers interested in acquiring a franchise, write to Haus of Krause, Rockford, Mich.*



preventive level is maintained at approximately two-thirds full to permit complete immersion of parts without liquid spillage.

The parts coming to the dip tank from the washing machine are well above room temperature. Their latent heat promotes evaporation in the tank. But the water carried in

Parts entering the rust-proofing dip tank are well above room temperature. Water carried in by wet parts balances evaporation losses in tank. Parts coming from dip tank (left) will be dry enough to handle when they reach the take-off area.

Rustproofed links being palletized for storage. Men work without special ventilation since water-based preventive generates no toxic or flammable fumes.

## FIREPROOF RUSTPROOFING

**PREVENTING RUST** with a water-based compound sounds incredible, but it's being done at International Harvester Company's Tractor Works in Chicago. The new technique was developed by the Works' Value Analysis Committee.

The plant, located on Chicago's near southwest side, manufactures a full line of crawler tractors, construction equipment, service, and parts, and also maintains facilities to process spare parts for world distribution.

To ensure delivery of parts in usable condition, a rust preventive must be applied. This coating has to withstand the hazards of domestic and export distribution. In addition, the rust preventive must not interfere with use of the part in cases where it is not practicable to clean the part before field installation.

Working with the Dearborn Chemical Company's research laboratories, introduction of their product, "Safeguard," was made without disrupting the existing production line. Only normal expenditures for fire protection equipment are now needed.

Parts come into the rust preven-



tive operating area at Tractor Works via an endless overhead conveyor.

Before application of a rust-preventive coating, the work is cleaned. The conveyor carries it through a three-stage, hot-spray washing machine. Although the final rinse is heated, there is always a residue of water carried out in concave contours of various parts.

Before using the new water-base rust preventive, it was necessary to use manual air blowoff at the washer exit since water contamination cannot be tolerated in solvent type rust-preventive tanks. Water-base material eliminates the blowing and effects a major labor saving. Parts now can proceed along the conveyor directly to the dip tank. This tank has a capacity of 3,000 gal. The rust

by the wet parts balances evaporation losses and almost completely preserves the dip tank's water ratio. When an occasional adjustment of the ratio is required, water is added through an accurately metered service line. Periodically, metered amounts of the rust preventive are added to make up evaporation losses.

The parts coming out of the dip tank are carried by the conveyor to the take-off area, where they are boxed or palletized. The speed of the conveyor is controlled to permit the rust preventive coating to dry sufficiently to permit handling.

With no toxic or flammable fumes produced during the process, ventilation requirements are less exacting.



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# THE SAFETY LIBRARY



Reviews of books, pamphlets and periodical articles of interest to safety men

By LOIS ZEARING, Librarian, NSC

## For Safety Committeemen

*Safety Committeeman's Handbook.* By Albert C. Gordon, Technical Book Co., 253 S. Spring St., Los Angeles 12. 1960. 124 pp. \$4.

THIS HANDBOOK was written by Albert C. Gordon, director of industrial safety for the Greater Los Angeles Safety Council. In 124 pages it discusses such problems of safety committees as selection of committee members and their responsibilities. It reviews committee operations and emphasizes the importance of agendas and minutes. Mr. Gordon has had more than 30 years of industrial safety experience and with this background has produced a book intended for companies who rely on safety committees to enhance their safety programs.

ROY BENSON

## Radiation in Foundries

*Foundry Radiation Protection Manual.* American Foundrymen's Society, Inc. Des Plaines, Ill. (Authors and Publishers). 1960. 60 pp. \$9.

WRITTEN and developed by the Radiation Protective Committee of the American Foundrymen's Society, this manual is an excellent source of information for foundries using radioactive isotopes. The manual covers radiation sources, health aspects of radiation, radiation controls, handling, and the problems of shielding.

There is a good section on the organization of a radiography department. Covered in this section are such items as training, equipment, facilities and layout and design of radiography rooms.

Radiation detection devices, both the portable survey type and the fixed type, are explained.

This book would also make a good reference book for the safety man who wants to develop a knowledge of what radiation is, what it does, what controls are necessary and how these controls are applied.

L. C. SMITH

## BOOKS AND PAMPHLETS

### Aeronautics

*Pennsylvania Aircraft Accident and Violation Analysis, 1959.* April 1, 1960. 40pp. Pennsylvania Aeronautics Commission, Commonwealth of Pennsylvania, Harrisburg-York State Airport, New Cumberland, Pa.

### Dusts

*Laboratory Equipment and Test Procedures for Evaluating Explosibility of Dusts.* Henry G. Dorsett and others. 1960. 21pp. Publications Distribution Section, U. S. Bureau of Mines, 4800 Forbes St., Pittsburgh 13, Pa. (Report of Investigation 5624). Free.

### Fire Protection

*Building Exits Code.* 17th edition. 1960. 250 pp. National Fire Protection Association, 60 Batterymarch St., Boston 10. (NFPA No. 101) Price \$1.50.

*Fire Hazard Properties of Flammable Liquids, Gases and Volatile Solids.* 128pp. 1960. National Fire Protection Association, 60 Batterymarch Street, Boston 10. Price \$1.50.

*RLM Standard Specifications for Industrial Lighting Equipment.* 1960 edition. 51pp. RLM Standards Institute, 326 W. Madison St., Chicago 6.

*Safety With Mobile Diesel-Powered Equipment Underground.* John C. Holtz. 1960. 87pp. Publications Distribution Section, U. S. Bureau of Mines, 4800 Forbes St., Pittsburgh 13, Pa. (Report of Investigation 5616). Free.

*Wire Ropes for Mines, American Standard Specifications for and Use of.* 43pp. 1960. American Standards Association, 10 E. 40th St., New York 16. (M11.1-1960 Revision of M11-1927).

### Off the Job

*Accidental Deaths Involving Small Boats, 1959.* 1960. 27pp. Outboard Boating Club of America, 307 N. Michigan Ave., Chicago 1.

*Recreational Boating Guide.* U. S. Coast Guard. 1960. 77pp. Superintendent of Documents, Washington 25, D. C. Price 40¢.

## MAGAZINE ARTICLES

### Blasting

"Blasting Safety in Woods Operations." J. D. Brookfield. *Pulp and Paper Magazine of Canada.* June 1960. Pp. 14-152, 154-16, 156-18.

### Construction

"Safety Precautions in Tunnel Construction." J. J. Williams. *The Constructor.* May 1960. Pp. 43-44.

"Vancouver Span Nears Completion." *Engineering News-Record.* June 30, 1960. P. 24.

### Electricity

"Preventive Maintenance of Mercury-Arc Rectifiers." Calvin H. Furfari. *Coal Age.* June 1960. Pp. 114-115.

### Electric Motors

"Care of Electric Motors: Part Two." F. C. Osterland. *Plant Maintenance and Engineering.* May 1960. pp. 53-54.

"Check List of Symptoms, Causes and Cures of Electric Motor Troubles." *Plant Maintenance and Engineering.* May 1960. Pp. 54-58.

### Fire Protection

"Filling Station Explosion Kills Three Firemen." *Fire Engineering.* May 1960. Pp. 394-395.

"How Union Carbide Plastics Company Protects Its Plant From Fire." Frank Hanifin. *Fire Engineering.* May 1960. Pp. 387-430-432.

"Protecting a Petroleum Refinery: Esso Bayway Boosts Safety and Production Through Plant-Wide Fire Fighting Organization." Harry T. Black. *Fire Engineering.* May 1960. Pp. 392-393, 395.

### Gas Industry

"Safety First in Gas Distribution." Oliver Van Meter. *The American City.* July 1960. Pp. 106-108.

### Hand Creams

"Antiseptic Cream for Use on the Hands in Food Establishments." Doreen L. Wedderburn. *British Journal of Industrial Medicine.* April 1960. Pp. 125-129.

### Health

"If There's a Doctor in the House." Carey P. McCord. *Supervisory Management.* July 1960. Pp. 2-6

"A Profile of Dispensary Visitors in an Atomic Energy Research and Development Plant." John G. Hipps and Raymond E. Masters. *A.M.A. Archives of Industrial Health.* Pp. 79/559 - 83/563.

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# Sounding Board

News of Interest in the Field of Noise Control

## Your Hearing Conservation Program Begins With an Accurate Analysis of Noise-Exposure

Because prolonged exposure to harmful noises cause early-induced hearing loss which is not easily discernible, the accurate analysis of these noises is a vital part of a proper Hearing Conservation Program.

### Accurate Sound Analyzer Necessary

The measurement of noise and its analysis, (the breakdown of noise into its various frequencies), calls for precision instruments and techniques. To make the function of noise measurement and analysis easy for non-technicians, the Rudmose Instrument Co. has designed a new combination sound level meter and analyzer which furnishes accurate sound level measurements and octave analysis with a simplicity of operation making it virtually impossible to obtain incorrect readings.

### Also Calibrates Audiometers

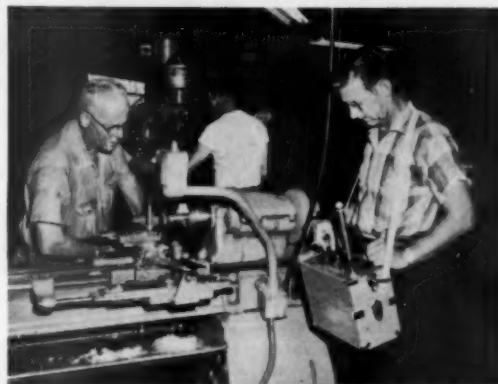
As hearing tests are the most important part of a hearing conservation program, the audiometer output must be checked routinely for accuracy of calibration. The

Rudmose R.A. #100 Sound Analyzer is equipped with an ear-phone coupler for checking the audiometer's accuracy of calibration. Circle 65.

**Audiometers and Audiometric Rooms, Too**  
The Rudmose R.A. #100 Sound Analyzer is an addition to the equipment distributed by Industrial Acoustics Company, Inc., for instituting a complete and effective Hearing Conservation Program. The Rudmose Automatic Audiometer is available for rapid and accurate hearing tests; and IAC Audiometric Examination Rooms for providing a proper environment for obtaining accurate audiograms. Circle 66.

### Control of Noise a Factor

Another important part of any Hearing Conservation Program is the control of noise at its source. This is accomplished by the use of IAC complete or partial noisy machinery enclosures or by protecting personnel with IAC "Quiet Rooms" to shield workers from damaging noise. Circle 67.



Measuring noise level of a machine with the new Rudmose #100 Sound Analyzer. The lightweight, completely transistorized unit is convenient for carrying.



R.A. #100 Sound Analyzer being used to check audiometer. The ear-phone coupler transmits audiometer signals into microphone for checking.

## "STEEL CLAD" TELEPHONE BOOTHS KEEP NOISE OUT-CONVERSATION IN



Wall Model "NOISHIELD" Telephone Booth installed in a machine shop.

IAC "NOISHIELD" telephone booths are engineered for high acoustic efficiency to provide ease of conversation in noisy locations or privacy of conversation where desired. Featuring rugged steel-clad construction, attractive finishes and low cost, these booths are ideal for factories, public buildings, terminals, schools, laboratories, restaurants, stores and for all noisy locations. IAC "NOISHIELD" booths are also available in floor models. Circle 75A.



Using the Rudmose Automatic Audiometer, subject conducts his own hearing test seated within an IAC Audiometric Examination Room.



An IAC machinery enclosure controls noise levels by isolating noisy equipment.

### Other literature available:

"Noise-Lock" Doors — Circle 68.  
"Quiet" Rooms for Supervisory Personnel — Circle 69.  
Control Rooms — Circle 70.  
Silencers for Air Handling Systems — Circle 71.

High Intensity Noise Chambers — Circle 72.  
"MINI-SIZED" Test Chambers — Circle 73.  
Mufflers & Industrial Silencers — Circle 74.  
Sound Isolation Rooms — Circle 75.



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## Better Driving

—From page 33

A representative of the refinery's safety department served as course coordinator. His role called for attention to detail in preparation for each session relative to scheduling instructors and state agency representatives, visual aids, and orientation of personnel assigned to various tasks. The coordinator summarized the previous sessions and introduced instructors and guests. He also made appropriate closing remarks.

A different instructor supervised each of the four sessions. The best qualified educators available within a reasonable distance from the refinery were invited to instruct. These men followed the course outline and objectives developed by the Esso Safety Foundation.

Visual aids suitable for large audiences were used. Audience participation was encouraged through discussion techniques and demonstrations. Instructors used a combination of lapel and stand microphones. Two microphone handlers, moving along the aisles of the auditorium with traveling mikes, stimulated comments by the audience. This technique enabled individuals to speak to the entire group. An effort was made to answer questions relative to course objectives. Also, participants were encouraged to write questions on cards provided at each session. The questions were answered at subsequent sessions.

The theme, "Defensive Driving," took advantage of the fact that many drivers blame the other fellow for accidents and poor driving practices. As the course progressed, criteria for driving practices were developed. Individuals were encouraged to evaluate their own driving practices in the light of these yardsticks. Feelings and attitudes were examined to improve personal insight. In these ways the course sought to develop the *attitudinal* aspects of driving.

Present at each session were representatives of the motor vehicle department of New Jersey and the state police. These representatives backed up the instructor in being available to answer questions. However, it was the instructor's respon-

sibility to keep sessions moving and to hold the interest of the audience.

**Improving Human Relations.** Inasmuch as this course has received favorable newspaper coverage at the refinery and in the community, workers not taking part have been favorably influenced in becoming

aware of all the course's objectives.

The program added to the prestige of Esso in the community and impressed on all employees and their families that management was giving full support to this safety activity.

This program helped employee relations by enabling management and their families to meet on an equal, continuing basis with hourly and salaried employees and their families. In addition, it strengthened the relationship between Esso and

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### OUTLINE OF COURSE

#### First Session

Informal greeting to group—Management  
Purpose of course and seriousness of traffic accident problem—Bayway Coordinator  
Motion picture, "And Then There Were Four"  
Discussion of film—Instructor  
Basic causes of traffic accidents (illustrated with visual aids)  
Question and answer period—Instructor and representatives of State Motor Vehicle Div. & State Police

Summarization and assignment  
Booklet, "You and Your Driving" distributed and reading and tests assigned

#### Second Session

Previous to this session, the group met for a demonstration of stopping distances by the New Jersey Safety Council. Included was a demonstration of stopping distances for Bucron tires in comparison to other tires on wet pavement.

Demonstration of psycho-physical testing and significance of tests  
Film, "Chain Reaction"  
Discussion of film  
Improving driver attitudes—discussion (illustrated with transparencies)  
Question and answer period  
Summarization and assignment (Distributed vehicle safety check lists)

#### Third Session

For 30 minutes previous to this and the fourth sessions, four sets of psycho-physical testing apparatus were operated by Motor Vehicle Division inspectors.

Motion picture, "Freeway Driving Is Different"  
Discussion of film, pointing out the important differences  
Safe driving practices and emergencies. Discussion illustrated with transparencies  
Motion Picture, "To See Ourselves," followed by discussion  
Improving perception in driving. Discussion illustrated with color slides on perception.  
Question and answer period  
Summarization and assignment

#### Fourth Session

Drinking and driving  
Things I would like to know (Question and answer session with questions submitted prior to or during the session)  
Panel—Staff of Motor Vehicle Division, State Police, State Safety Council, Course Instructor

Summarization of course  
Objective Driver Knowledge Test—20 minutes  
Motion picture, "You and Your Driving"  
Discussion, Closing remarks



## Don't let a greasy floor slip one over on you

---

### *Keep floors safe with Zorb-All*

ZORB-ALL® particles go on working long after ordinary absorbents have lost their effectiveness. That's because ZORB-ALL won't break down. We make ZORB-ALL as safe as we possibly can. Not for *speed*, but for *safety*. We intend to keep it that way.

It stands up best under severe punishment . . . assures non-skid stops when more absorptive materials fail . . . remains effective nearly twice as long as such materials. And it sweeps up easily, wet or dry.

All of this has been proved time and again in laboratory tests, in skid tests with rolling equipment, and in actual use.

You can get ZORB-ALL from your Wyandotte representative or jobber. Don't let another day slip by. Call today! *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Also Los Nietos, California; and Atlanta, Georgia. Offices in principal cities.*



## **Wyandotte® Chemicals**

**J. B. FORD DIVISION**

## Ghostly Arms



THIS IS NOT a medieval torture chamber. It isn't even a scene from *I Was a Teen-Age Mad Scientist*.

It's just a part of the day's work for the researcher in the picture. He is William Henderson, of the Research and Development Center, Sun Oil Co., Marcus Hook, Pa. He's putting a sample from the foot-long needle into a flask. The phantom-like arms are inside-out rubber gloves, part of the dry box equipment in the lab. These glove boxes enable scientists and technicians to mix their brews in a controlled atmosphere. This way, they contaminate neither themselves nor their chemicals. (Photo courtesy *Our Sun*, Sun Oil Co.)

## Belts Keep You Alive

Persons thrown from cars in traffic accidents are five times more likely to be killed than those who succeed in staying inside the car.

A Cornell University study showed that users of seat belts have 60 per cent less chance of injury in a traffic accident than people who don't use the belts.

For folks who say they don't need seat belts because they only drive around town at relatively low speeds, the Council cited this fact: Nearly three out of 10 fatal traffic accidents occur at car speeds of no more than 30 m.p.h.

From *Accident Facts*—  
1960 Edition.

## Better Driving

—From page 74

state agencies that participated, such as the New Jersey State Police, the New Jersey Division of Motor Vehicles, and the New Jersey State Safety Council.

During the two months of the program there were only three (one in traffic) off-the-job disabling accidents. The reduced off-the-job frequency of 4.3 for the first half of this year is believed to be due largely to the Defensive Driving Program. At present, Bayway is bettering its 1960 refinery goal for off-the-job disabling accidents established at the beginning of the year at 41 for a frequency of 4.7, compared to 17.0 for 1956.

This driving program also contributed significantly to Bayway's improved industrial injury frequency of 1.25 per million man-hours for the first half of this year, compared to last year's frequency of 2.21. Esso management feels the course will make safer workers, as well as safer drivers.

More than 85 per cent of the participants voluntarily took the Driver Knowledge Test at the end of the course. Scores on the 50 questions based on course material average 82.5. This indicated the students learned their lessons well. Little difference was noted between average scores for the men, women, and teenagers. This indicated that all age groups benefited about equally.

Reaction of employees and relatives participating has been gratifying. On a course-evaluation questionnaire completed at the end of the last session, 99 per cent of the students rated the program "excellent" or "good" on its educational value and helpfulness, and thought it was the right length. About one-half added comments on the value of the program. Typical of those received are:

"Enjoyed the program very much and have picked up important pointers toward safer driving."

"I think that more companies and associations should promote this type of program. The course conditions our attitudes on driving and brings to our attention poor driving habits which we were not conscious of. The program was well worth attending."





**"Our business is comfort with safety. We practice it all the way with Sound Barriers."**

H. T. Cooper  
General Foreman of Base Maintenance  
Delta Air Lines  
Atlanta, Georgia

Noise levels up to 128 decibels . . . enough to damage the unprotected ear in less than 30 seconds . . . are everyday experiences to ground crews who inspect jet engines on sleek Delta airliners. Wearing Willson Sound Barriers with noise-cancelling microphones, Delta personnel stand directly under a whining jet engine for 15 consecutive minutes while making preflight power checks.

"Fluid-filled vinyl cushions of Willson Sound Barriers attenuate shrill jet engine noise," says H. T. Cooper, general foreman of base maintenance for Delta Air Lines in Atlanta, Georgia, "and help us practice what we preach: 'comfort with safety'. The carbon microphone, mounted in Willson's mouth cup, drowns sound so voices are heard distinctly and confusion is eliminated."

Sound Barriers are standard equipment for all Delta personnel working within 100 feet of an operating jet. At least two—usually four—jet engines remain operating while planes are serviced at the gate. Every effort is made to minimize personnel exposure to jet noise, but some is unavoidable. Comments Cooper:

"Because Sound Barriers attenuate high-decibel noises, our men can do their work quickly, efficiently, and with less fatigue. The microphones also cancel jet engine noise combinations of rumbling, low-pitched exhaust and high-pitched whines, so communications are completed with safety."

*(Continued on next page)*

**WILLSON®**

**"Our most severe test  
of Sound Barriers  
comes during jet  
engine preflight checks.  
Noise reaches 128  
decibels, but Delta  
mechanics can work for  
15 consecutive minutes."**

Delta's most severe test of Sound Barrier-microphone performance is made on preflight tests. During the power check, one or two mechanics stand directly under the engine to make visual inspections through access doors. The engines run at different power levels. This process is repeated several times, so over-all check-out time exposes mechanics to engine noises for two

or three hours.

Notes Cooper:

"Noise at these levels may reach 128 decibels, which can be withstood for approximately 30 seconds without ear protection before permanent damage is inflicted. Effectiveness of Willson Sound Barriers and microphones is evident when personnel can work under these conditions for 15 consecutive minutes."

Delta selects its hearing protectors on the basis of rugged construction, efficient sound attenuation, negligible head pressure, easy accessibility for cleaning, and adjustability to head shapes.

Wearability is important because some earmuffs are returned to the tool crib several times a day. They receive considerable handling. While sponge-type cushions posed

SOUND BARRIER  
MODEL 260-C  
WITH MICROPHONE



a sanitation problem when different persons used the muffs, Fulton Supply Co., Atlanta, was able to show Delta how the tough vinyl-covered cushion of a Willson Sound Barrier is easily sanitized by swabbing with alcohol between use by different people.

In regard to fit, Cooper reports: "The fluid-filled cushions of Willson Sound Barriers make a contoured seal between the skin and the muff. The swivel action of Sound Barrier ear cups and moderate tension from the adjustable head frame provide even cushion pressure, though we're fitting many different head shapes. These two features prevent even a slight misfit which would make the muff leak sound and lower its effectiveness."

You may have a sound problem as critical as jet engine noise. For detailed information on how the Sound Barrier improves protection of the human ear, phone your Willson safety distributor.



Willson Sound Barriers attenuate harmful high-frequency noises, but enable the wearer to hear low-level instructions and warning signals.



Willson Products Division  
Ray-O-Vac Company  
Second and Washington Streets  
Reading, Pennsylvania

In Canada — Safety Supply Company

**WILLSON®**

**SAFETY is worth working for**

# Partners in Plant Protection

Help in pre-fire planning and readiness for emergencies  
make the city fire department a valued part of industry's team

By **JOHN W. HALL,**

Chief, Fire Department,  
Hagerstown, Md.

**J. C. ROBERTSON,**

Senior Instructor,  
Fire Service Extension,  
University of Maryland,  
College Park, Md.

ONE MAJOR POINT under the laws of learning is that people like to do what they can do best. The reverse of this statement is also true; we don't like to do what we do not do well. Likewise, often we don't care for things which we don't understand. Unfortunately, these latter truths can often be applied to cooperation between fire departments and industry.

Many fire departments have shunned industries because the operations behind the plant fences have seemed to be mysterious and complicated. They have felt that industry operates in its own manner, a manner which doesn't include the fire department. The processes and procedures followed in industry have not been understood by fire service members in many areas.

Likewise, there are industries whose management does not understand or have confidence in public

fire departments and, as a result, make no effort to solicit the cooperation of the local fire chief. This may even be carried to the extreme of banning the fire department from the premises. A plant engineer in one plant has a policy of discharging any employee who calls the city fire department in the event of a fire in his plant.

Unfortunately, failure to cooperate has caused the spread of fires, loss of firemen's lives, injury to firemen and plant employees, embarrassment to fire departments and industry, and a multitude of other problems. Economic losses to communities affected are great and include loss of payroll, with subsequent hardship to the community.

Our country's industrial production has more than doubled in the past 25 years. Consequently, industry's importance to the community has grown tremendously. All over the country we see towns with new industries, in many cases the first in the community. It doesn't take long for the new industry to become a major part of a community's existence. Prolonged closed periods resulting from a fire will be deeply felt by citizens.

To discuss ways in which industry may cooperate with fire depart-

ments, it will be well to first look at industry's over-all fire protection situation. It can be divided generally into three parts:

1. The plant building or buildings, including machinery and equipment needed for production.
2. Fire protection equipment, including automatic sprinklers, water supplies, portable fire extinguishing equipment, and fire alarm systems.
3. Plant personnel, including workers, supervisors, and management.

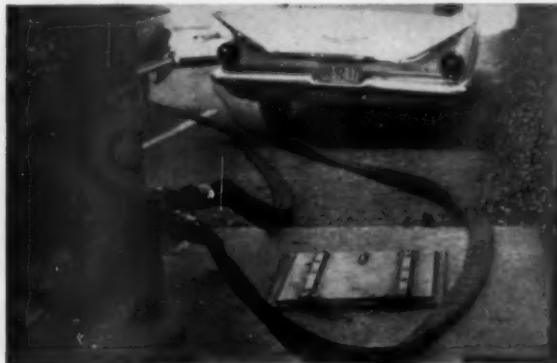
Fire departments can cooperate with industry in each of these three phases of industrial fire protection. In each there are a number of points for mutual consideration.

Let's first consider the plant building or buildings, including all machinery and equipment necessary for the production of a product, whatever it may be. This also includes appurtenances required for machinery operation, such as wiring and ductwork.

In many cities the fire department has the opportunity to review plans of proposed industrial structures before construction begins. In this way they may suggest changes in the plans which would result in improved fire protection. Many times,



Pre-fire surveys find possible obstructions to fire fighting as well as methods of entry and plant layout. Special conditions which would affect fire fighting are also noted.



Pre-fire planning drills include a check on the access of fire protection equipment. This parked automobile would delay access to the fire department sprinkler connection.

fire marshals have detected fire protection shortcomings in the original plans and obtained corrections at that time rather than the more expensive type of correction after the building has been completed. Fire departments which have no legal responsibility for checking blueprints may obtain permission to do so on a cooperative basis. An approach to this possibility might be made through management. In the past 25 years industrial building requirements have generally changed from multiple story buildings to large-area single-story buildings.

Severe fire possibilities exist in buildings under construction. All too often, fire protection is utterly disregarded while the building is under construction. We can find many examples over the country of large-loss fires in buildings of this type. Alert fire departments check these areas and make every effort to assure proper protection.

Once the building is completed, the fire department can make complete plans on fire-fighting possibilities in the building. Pre-fire planning has become an integral part of the operation of many progressive fire departments. The value of this procedure has been proved time and time again in the saving of life and property.

A first step in pre-fire planning is the obtaining of plans of buildings. The Little Rock, Ark., Fire Department, for example, obtains insurance plans of industries in the city. The firemen study these and then visit the plant for more complete familiarization with the premises. They have good reason to appreci-



Hagerstown firemen complete the pre-fire planning survey of a local industrial plant. Radio equipment enables the fire company to remain in service during the survey.

ate this procedure as they once answered an alarm to a plant where changes had been made, including the addition of 25 drums of carbide in one corner. Firemen hit this corner with water before realizing the nature of the contents.

One of the best pre-fire planning procedures we know of is that of Fall River, Mass., Fire Department, under the capable direction of Chief Francis J. McDonald. Fall River was the scene of a tremendous rubber plant fire early in World War II. This fire pointed out vividly the importance of pre-fire planning. As a result of this and other experiences, Chief McDonald installed an accurate fire planning system several years ago.

The system employed in Fall River was developed by Paul I. Leary of Baltimore, proprietor of

the Maryland Survey Bureau. A captain in the Fall River Prevention Bureau is assigned the full-time duty of preparing pre-fire planning cards for fire ground use. These cards include plans of the structures with simplified symbols for immediate reference. They also have simplified factors to be considered by officers in fighting a fire in the plant.

Fire companies in Fall River go to the plants and hold drills with assigned positions for pumper and ladder operation. These drills include redeployment for possible changing conditions. This system has worked out well in Fall River. It is impossible for the human mind to remember in times of stress every feature of importance that may have been seen during a visit to the plant. The card eliminates the necessity of

—To page 94



Sprinklers in this plant are fed by a public water main. Limitations make it highly desirable to supply the fire department sprinkler connection with two hose lines from a pumper at draft.



Fire Department Instructor A. K. McGraw coaches Hagerstown Rubber Co. employee in operation of CO<sub>2</sub> extinguisher. This is part of department's brigade training program.





**T**HE odor of most plastic-coated gloves worn by workers stays on the hands and creates a smelly problem at lunch time. But Hood Flexigluv has no obnoxious odor. It gives protection on the job, but doesn't leave hands smelly afterward.

Hood's Koroseal Flexigluv has still other advantages over ordinary plastic-coated gloves. It withstands solvents, light oils, and just about everything else that causes ordinary plastic gloves to fail. It stays flexible at low temperatures. And this glove wears longer, gives greater finger dexterity because the

fingers have no seams on the wearing surface. Flexigluv is made with a two-piece jersey shell, comes in knit wrist (K-200), 12" (K-201) and a 14½" (K-202) gauntlet.

Improvements like those made in the Hood Flexigluv can be found in other industrial gloves of the Hood line, which includes latex gloves and gloves coated with neoprene, rubber and Koroseal. For more information, call your Hood distributor, or contact Hood Industrial Gloves, Dept. N, Watertown 72, Massachusetts.

Koroseal—T.M. Reg. U.S. Pat. Off.

Visit us at Booth #302 National Safety Congress

**HOOD** *industrial gloves*



The factory of Hamakua Mill Company.

Seed cutters wear shin guards like those worn by baseball catchers.



# Sugar's Safety Harvest

**Vigorous programs on Hawaii plantations bring hazards of mechanized agriculture under control**

**By E. O. EVANS**

Assistant to the Manager,  
Hamakua Mill Company  
Hawaii

HAWAII, newest state in the Union, honored 15 companies recently for safety accomplishment during 1959.

Among these companies, leaders in industrial safety, was Hamakua Mill Company—a sugar plantation located on the largest island in the Hawaiian chain. Hamakua Mill employee Miyuki Narimatsu, factory toolroom keeper and member of the company's central safety committee, representing the 330 employees of his company, received the state's highest honors in the sugar division—the Award of Honor and the Award of Merit.

The success achieved by Hamakua Mill Company illustrates what can be done when new industrial safety practices are adapted to highly mechanized agricultural operations encumbered by unfavorable terrain and weather.

This company's record is not unique but, rather, like the entire Hawaiian sugar industry in which it operates, makes possible a limited goal. It is hoped this will lead to greater rewards—the continued reduction of human suffering and economic loss by elimination of industrial accidents.

Hamakua employees won the new state's safety recognition by working over one million man-hours through 1959 without a disabling industrial injury. Only four other of the 26 sugar companies operating in Hawaii have done as well. Hamakua's safety progress is even more dramatic when it is revealed that in 1957 this company had the poorest safety performance in the local sugar industry: frequency rate 32.30 and severity rate 1,003. The industry's average frequency rate was 6.84 in that year.

This triggered action. In 1958 safety brooms went to work and made a clean sweep during 1959.

Prior to 1958, Hamakua approached the problem of promoting

safety through one group, the company's central safety committee. This was a joint committee, composed of supervisory and hourly-rated employees. The committee, meeting monthly, discussed general safety problems and made recommendations. They did not inspect operations or investigate accidents. Lack of follow-up on discussions and suggestions made the committee ineffective.

A reorganization in 1958 was essential. The first step was the preparation of a company safety manual. This manual set forth the policies and rules to be followed by the company's employees. In this pamphlet every department's special situations received emphasis. It also spelled out the protective equipment to be used and who should use it. Each employee was given a copy. Company supervisors then reviewed and explained the manual to their employees during working hours.

Safety performance became the responsibility of each employee,

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guided by his supervisor. The industrial relations department made sure supervisors did a consistent safety job.

The reorganized central safety committee, meeting on a monthly basis, began making investigations and periodic inspections. Procrastination went out the window. Recommendations made in one month's meeting were processed for management review immediately.

Department committees were organized with a supervisor as chairman and hourly-rated employees serving as members. These committees began making inspections, investigating accidents, and submitting safety suggestions to the central safety committee for action.

Comprehensive courses of training in safety were started with the departmental committee members in attendance. Forty per cent of all the company's employees have now received a 10-hour general course in industrial safety. The American Red Cross stepped in and trained key personnel in first aid.

Awards were set up. For each month in which a division of the company recorded no disabling injuries, a pair of safety shoes was given to each of two employees of that division. The company's newspaper stressed safety in each issue with interesting personal articles and pictures of safety awards, and suggestions that had been adopted. Local Hawaii newspapers cooperat-

ed in publishing safety news items.

A close liaison was developed between the company medical department and those coordinating safety. Delays in reporting and treating accidents became non-existent.

The union, Local 142, ILWU, accepted the safety program. It encouraged safe working practices and supported policies of the company regarding general safety protective equipment. One employee, a union officer, acting on his own initiative, sold over 100 pairs of safety shoes to employees.

Gradually, over a period of months, safety awareness took hold. In 1957 Hamakua had experienced 244 nondisabling accidents. And in 1958 the company's frequency dropped to 7.37. In 1959 the score was 0, with 150 nondisabling accidents reported. On February 18, 1960, one million man-hours had been worked since the last disabling accident in September 1958.

Hamakua's organization chart includes these departments: cultivation, harvesting, manufacturing, maintenance, engineering, construc-

—To page 130



Mechanization on a sugar plantation—a planting machine at work.

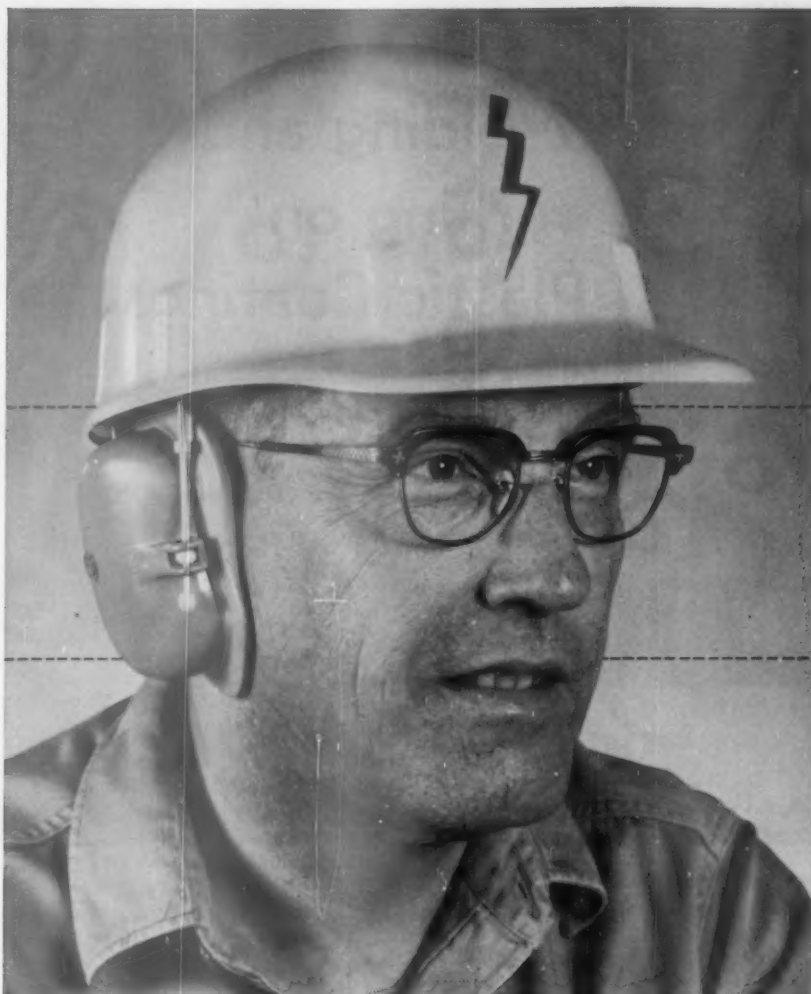


A member of the central safety committee makes an inspection of an ammonia valve.



Safety exhibit includes various types of personal protection and an NSC trophy.





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# Welding and Burning on Plastic Coatings

Many of the by-products are toxic; others are doubtful. Good ventilation and personal protection are needed to safeguard the welder's health

By **NEWTON E. WHITMAN**

Industrial Hygiene Chemist, Bethlehem Steel Company, Bethlehem, Pa.

**SPECIAL** corrosion-resistant coatings on steel are being used increasingly. Repair of steel structures which have been coated with such materials almost always requires the application of heat to the coating (welding and burning) which results in the formation of hazardous thermal decomposition products.

However, these special coatings can be handled safely provided those responsible for the health and safety of the workers are aware of the nature of the hazards and the proper precautions to avoid injury.

There is a tremendous variety of coating materials which may be used on steel with new products being developed rapidly. However, from the standpoint of health hazards due to the breakdown of products from heating (thermal decomposition products) these plastic materials can be divided into five groups:

1. Coatings which contain only carbon, hydrogen, and sometimes oxygen such as polystyrene and phenol-formaldehyde.
2. Coatings which contain carbon and hydrogen (hydrocarbons) plus chlorine.

3. Coatings which contain nitrogen plus hydrocarbon such as the isocyanates or polyurethanes.

4. Coatings which contain fluorine plus hydrocarbon.

5. Coatings which contain metals such as lead, zinc, and chromium in addition to some plastic material.

## 1. Hydrocarbon Coatings

Coating materials which are essentially hydrocarbons such as polystyrene, phenol-formaldehyde which when subjected to heat will give rise to carbon dioxide, carbon monoxide, aldehydes, organic acids, and some of the monomer or starting materials; that is, in the case of polystyrene some styrene will be formed, in the case of phenol-formaldehyde resins some phenol. If an oxyacetylene torch is the source of the heat, significant concentrations of nitrogen dioxide will be formed, since the oxyacetylene flame alone will produce this compound in ordinary air.

As an illustration of the type of difficulty which can occur with these plastics, men welding on pipes complained about highly irritating fumes arising from the operation. Upon investigation it turned out that the pipe was coated on the inside with a thin layer of a phenol-formaldehyde resin. Each pipe required very little welding but the heat from the welding arc penetrated through the steel and decomposed a small amount of plastic on the inside giving rise to phenol concentrations in the air which caused coughing. Fortunately, phenol vapors are so irritating that men will not tolerate concentrations high enough to cause serious injury, unless they are trapped in them.

Chlorine-containing plastics will give off high concentrations of hydrogen chloride (hydrochloric acid gas) in addition to the gases and vapors coming from the hydrocarbon part of plastic materials. It is possible that chlorine or phosgene might be formed. However, if this can occur it must be rather rare. Several investigators have reported that they found no free chlorine or phosgene. This corresponds to my own rather limited experience with this type of material.

## 2. Coatings Containing Chlorine

Chlorine-containing plastics will give off high concentrations of hydrogen chloride (hydrochloric acid gas) in addition to the gases and vapors coming from the hydrocarbon part of plastic materials. It is possible that chlorine or phosgene might be formed. However, if this can occur it must be rather rare. Several investigators have reported that they found no free chlorine or phosgene. This corresponds to my own rather limited experience with this type of material.

## 3. Coatings Containing Nitrogen

Coatings which contain an appreciable percentage of nitrogen

Presented at the Marine Section of the Safety Convention, Greater New York Safety Council, March 30, 1960.



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may give off ammonia, hydrogen cyanide, and nitrogen dioxide, in addition to the thermal decomposition products from the hydrocarbon part of the material mentioned previously. To the best of my knowledge nitrogen-containing plastic coatings have not been used in ships. However, in the rapidly developing field of plastic coatings it is probable that this type of resin will be encountered at some future date. At least one type of nitrogen-con-

taining resin, the polyurethanes or isocyanates, have been used in the manufacture of plastic foam and have also been advocated for coating sheet steel. It is possible that some of these coatings may contain both chlorine and nitrogen.

#### 4. Fluoride-Containing Coatings

Coatings which contain fluorine, commonly known as fluorocarbon

polymers or resins, are unique with regard to their thermal decomposition products. On heating most of the breakdown products are organic and inorganic fluorides with very little aldehydes, or organic acids.

Between 350 and 800 F the fluorocarbons give off a fume of unknown composition, which causes chills and fever similar to metal fume.

Above 800 F more toxic products are formed. These products include a compound thought to be perfluoroisobutylene which is about as toxic as phosgene and similar to phosgene in its action on the lungs. Although these resins have many advantages as coatings, their high cost will limit their use for some time.

Any of the above resins or coatings, with the possible exception of the fluorocarbons, may contain lead (probably as red lead) or zinc and chromium (commonly as zinc chromate).

In spite of the complexity of the coating materials for steel which may be encountered in ship repair, it can be seen that certain hazardous gases and vapors are common to almost all of these materials. Consequently, the problem of protecting against the associated hazards is considerably simplified. We must be prepared to guard against:

1. Nitrogen dioxide.
2. Hydrogen chloride.
3. Carbon monoxide.
4. Aldehydes.
5. Heavy metals, such as chromium, zinc, and lead.
6. Fluorides.
7. Hydrogen cyanide.
8. Various starting materials or monomers such as phenols, or toluene diisocyanate.

#### 1. Nitrogen Dioxide

Whenever an oxyacetylene torch is used, nitrogen dioxide will be generated. The larger the burner tip and the more rapid the fuel consumption, the greater will be the rate of nitrogen dioxide formation. In open air this will seldom, if ever, result in excessive breathing zone concentrations. However, in a poorly ventilated and confined space, concentrations above the threshold limit of 5 ppm may occur. When burning on a plastic coating which

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contains a significant amount of nitrogen, additional nitrogen dioxide will probably result from thermal decomposition of the plastic.

Nitrogen dioxide is a dangerous gas. Concentrations in the range of 50 to 100 ppm (.005-.01 per cent) can cause serious illness or death after a few hours' exposure. Deaths attributed to nitrogen dioxide from the use of an oxyacetylene torch alone have been extremely rare, but the addition of nitrogen dioxide from another source would make the operation much more hazardous. Although nitrogen dioxide is somewhat irritating to the nose and eyes, it is not sufficiently obnoxious to prevent inhalation of a toxic amount. The effect of brief exposures to concentrations at or somewhat above the threshold limit of 5-50 ppm is not known. It would seem unwise to expose men to these concentrations routinely or for long periods of time when such exposure is avoidable.

In discussing nitrogen dioxide, I used the term "threshold limit." The threshold limits are a group of air concentration values expressed in

parts of contaminant per million parts of air, or milligrams of contaminant per cubic meter of air, which have been promulgated by the Threshold Limits Committee of the American Conference of Governmental Industrial Hygienists.

These limits are sometime called *maximum allowable concentrations*. They represent conditions under which it is believed nearly all workers may be repeatedly exposed day after day without adverse effects. They are time-weighted-average concentrations for a normal work day. The amount by which these figures may be exceeded for short periods without injury to health depends upon a number of factors, such as the nature of the contaminant, whether high concentrations even for short periods produce acute poisoning, whether the effects are cumulative, the frequency with which high concentrations occur, and the durations of such periods.

The threshold limit values are based on various toxic effects or discomfort. These limits are intended for use in the field of industrial hygiene and should be ap-

plied or interpreted only by persons trained in this field.

## 2. Hydrogen Chloride

Hydrogen chloride or hydrochloric acid gas is one of the most common air contaminants resulting from welding or burning on plastic coatings. This is due to the fact that chlorine-containing plastics are quite frequently used in such coatings. While not highly toxic, hydrogen chloride is very troublesome because of the relatively large quantities generated and its irritant properties. The threshold limit based on irritation is 5 ppm. Because of the irritation men will not tolerate exposure to a concentration which might be dangerous.

## 3. Carbon Monoxide

Because of the strongly oxidizing nature of the oxyacetylene flame it is probable that excessive concentrations of carbon monoxide will not occur when burning directly on a plastic contaminated surface. However, when any source of heat is

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applied to steel which is coated on the side opposite from the heat source, carbon monoxide may be one of the major air contaminants.

#### 4. Aldehydes

As a rule, aldehydes are not highly toxic but irritating, especially to the eyes. Some aldehydes can be expected to occur in the thermal decomposition of almost all coating materials. As a rule, formaldehyde will be the major constituent of all

the aldehydes present. Since formaldehyde is also the most irritating of all the aldehydes, except acrolein, it is customary to treat the mixed aldehydes as if they were formaldehyde. Because of its irritant properties, a threshold limit of 5 ppm is imposed on formaldehyde exposures.

#### 5. Heavy Metals

Chromium. Zinc chromate primers are now fairly common. Also,

the base metal may contain some chromium. Welding or burning on chromium-containing materials will result in the volatilization of this element as the oxide  $\text{CrO}_3$ . Chromic oxide ( $\text{CrO}_3$ ) is highly irritating to the respiratory tract. Because of the irritation a threshold limit of 0.1 mg/ $\text{M}^3$  (one tenth milligram per cubic meter of air) as  $\text{CrO}_3$  has been established.

Zinc is not nearly as toxic as chromium but is more readily volatilized and can be very troublesome. Most of you have had some experience with metal fume fever otherwise known as brass chills or foundry ague. Metal fume fever is almost always due to zinc fumes and while uncomfortable temporarily, causes no permanent damage. In addition to its use as zinc chromate primer, it is an additive in certain plastic coatings and also occurs on galvanized sheet metal.

Lead is a fairly common air contaminant in welding and burning operations. The principal source of lead fumes is the red lead primer so often found on steel. However, other sources of lead fumes may be present so the fact there are no visible signs of red lead does not ensure against excessive air concentrations. Unfortunately, lead does not have any warning properties, such as irritation or odor, so overexposure can easily occur. Inorganic lead is highly toxic systemically on an accumulative basis but illness from a short exposure to high concentrations is practically unheard of. The threshold limit for lead has been set at 0.2 mg per cubic meter of air.

#### 6. Fluorides

As explained previously, the fluorocarbon coatings give rise to a number of organic and inorganic fluorides when subjected to heat. Not much is known about these products. The fumes given off between 350 and 800 F are relatively less harmful and can be considered in the same category as zinc fumes. These fumes may be simply finely divided tetrafluoroethylene. Above 800 F a much more toxic product (or products) is formed. The composition of the toxic decomposition product is not definitely known. No threshold limit has been proposed



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for the thermal decomposition product. The warning properties, such as odor and irritations, are evidently not sufficient to prevent serious injury to the lungs or even a fatality.

As an illustration of the toxicity of these fumes, the following will serve. It was desired to remove the plastic coating from the blades of a propeller fan. To do this the fan was placed in a core oven and heated. The heat removed the plastic. Unfortunately, it turned out that the plastic used was a fluorocarbon polymer. The core oven was poorly ventilated and also had some cracks in it which permitted the fumes to escape into the air of the building. The fumes rose up to the rafters and out through a monitor. In the process about 40 pigeons which normally roosted in these rafters were killed. Luckily none of the men involved was exposed to these fumes.

## 7. Toxic Monomers

As a rule, the monomers or basic ingredients of the various plastic coatings are less toxic than the other decomposition products. However, this is not the case with the polyurethane or isocyanate resins. These resins usually contain toluene diisocyanate, which is as hazardous, or more so, than many of the common pyrolysis products. The threshold limit on toluene diisocyanate is 0.1 ppm. This compound is a powerful eye, lung, and skin irritant. Unfortunately, the immediate effects are not sufficient to prevent overexposure which may cause illness.

## Control of Hazards

Methods of sampling and analysis are available for almost all the decomposition products mentioned above. However, application of these methods often requires apparatus that is not readily available and techniques which are difficult to master. Means of ready identification of the various types of plastic coatings are not available at present.

Recently a number of simple-to-operate, portable air-sampling devices have appeared on the market. At first glance these devices appear ideal for shipyard use. However, there is considerable doubt about their reliability. At present this equipment is being evaluated by the

U. S. Public Health Service and other independent groups, including our own organization. Within one to two years we should know which of these units are reliable. Also the problem of ready identification of the various types of plastics is under study.

Finally, it may be well to summarize the main measures which are applicable to the control of gases and fumes.

As much of the coating as possible should be removed by mechanical means from a strip about three to four inches wide on both sides of the intended cuts or welds. Even though this is done, good general ventilation is necessary—about 2,000 cfm per burner. This will protect supervisors and other personnel who may be exposed briefly. It will also prevent the fumes from seeping into crew's quarters

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or other places, if properly applied.

Unfortunately, general ventilation will not protect the welder or burner satisfactorily. Local exhaust for the individual welder or burner would be satisfactory provided the inlet could be kept sufficiently close to the work. However, this is seldom the case. Under these conditions it is necessary to resort to respirators for the welders and burners.

Chemical cartridge respirators would give adequate protection

against some of the gases but would not protect against the fumes. Mechanical filter respirators can be obtained which would give good protection against the fumes but would not be satisfactory for the gases. Consequently, supplied-air respirators are the only truly dependable kind. In the case of the burners it is recommended that full-face respirators be used to give eye protection against the irritating gases.

## Partners in Plant Protection

—From page 80

depending on memory. Other departments, including Tulsa, Okla., Jacksonville, Fla., and Calgary, Canada, are using somewhat similar systems.

Fire department pre-fire planning drills on industrial properties have been successful. These drills should include all mutual aid companies that might respond to a serious fire in the plant.

The second phase of the industrial fire protection picture is that of fire protection equipment, including sprinkler and fire alarm systems, portable fire extinguisher devices and water supplies for fire protection. A plant can exist without these appurtenances for an indefinite period. That period is strictly a gamble. The odds will improve in favor of continued operation as improvements in fire protection equipment are made. Every now and then we read of total losses in plants which have no fire protection equipment whatsoever.

An example of a plant which was completely equipped for production but lacked the barest essentials of fire protection equipment is shown in the fire at Williamsport, Md., this past October. The loss was around \$2,000,000 plus a great loss to this small town. Four industries occupied the structure which had been expanded with no consideration for fire protection. The building was more than 600 ft. long with no fire cutoffs. It lacked sprinkler protection and alarm facilities.

The Williamsport Fire Department answered the alarm and called for mutual aid almost immediately. When a Hagerstown fire company left their city in response to the call for help, they could see the glow in the sky from the city limits, over six miles away.

In looking at the positive side of the picture, there are thousands of industries equipped for fire protection in some manner. There are wide varieties in the degree of protection afforded, ranging from merely a few hand extinguishers to complete supervised automatic sprinkler protection.

Unfortunately, one of the major failures in fire department—industry cooperation exists in the protection



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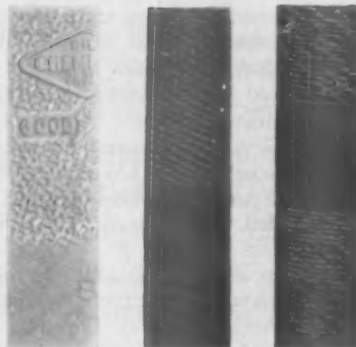
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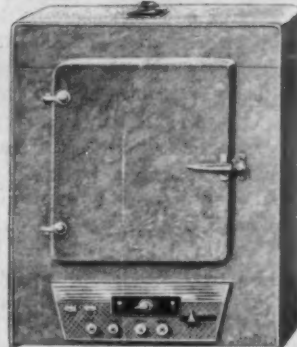
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# Amazing "Torture Test" gives PROOF POSITIVE!

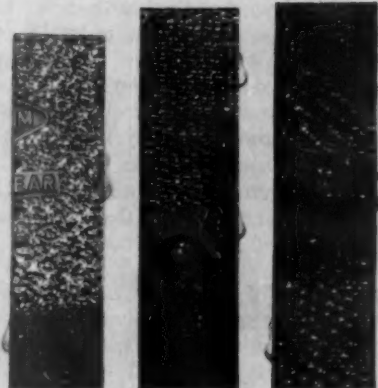
**BEFORE**



CHEMIGUM    BRAND X    BRAND Y



**AFTER**

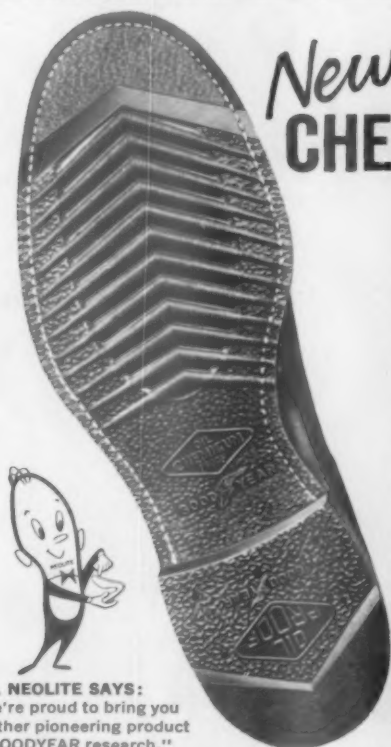


CHEMIGUM    BRAND X    BRAND Y

To test the oil-absorption resistance of Chemigum and competitive brands, equal-sized strips of Chemigum and two other soling materials were selected. Brands X and Y were samples of "oil-resistant" soling now used on nationally advertised brands of safety shoes.

The three strips were then immersed side by side in diesel oil and "cooked" in an oven at 100° F. continuously for 24 hours. This sustained heat subjected the materials to a real torture treatment that permitted maximum absorption of the heated diesel oil.

After removal from the oven and the heated diesel oil the Chemigum strip had expanded only a small fraction. The strip of Brand X soling swelled 2.17 times as much as Chemigum. The Brand Y material swelled 2.26 times as much as Chemigum.



## New CHEMIGUM OIL PROOF SOLES

The "torture test" tells the story: Chemigum is far superior in rejecting oil absorption. That's why shoes soled and heeled with Chemigum are far and away the safest for use in every factory where oil drippings present underfoot dangers. What's more, CHEMIGUM Oil Proof Soles have an "engineered tread" for sure-grip, non-slip walking even on floors cluttered with steel chips and other factory debris. And, in addition, they're long-wearing for true economy.

Leading manufacturers of all types of safety shoes are replacing old-style soles with these remarkably safer CHEMIGUM Oil Proof Soles. For safety's sake, always specify CHEMIGUM Oil Proof Soles!

**CHEMIGUM Heels** are made of the same sensational oil proof material as CHEMIGUM Soles.

Lots of good things come from

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phase. In too many cases, sprinklers, for example, have not been used properly by fire departments. These failures have contributed to some tremendous fire losses.

Last year a large eastern mill was reduced to ashes and junk. The plant was fully sprinklered. When the fire department arrived, clouds of smoke could be seen; however, the fire department, at the insistence of plant officials, shut off the sprinklers to curtail water damage. Conditions worsened and sprinklers were eventually restored to service. However, by this time so many heads had opened that the single water supply was overtaxed. At no time was an effort made to use the two fire department sprinkler connections.

A number of major losses has been caused by sprinkler valves being shut during the fire. Factory Mutual records reveal that about one-third of these prematurely shut valves are closed by fire department members and two-thirds by plant employees.

There is no known substitute for

complete automatic sprinkler protection. Fire department cooperation with industry should include utilization of this fire protection where it exists.

We mention water supplies, alarm systems, and other extinguishing devices under the protection category. Fire departments often work closely with industry in these items. Perhaps the fire alarm system in the plant is connected to the municipal system, or a city box may be located on the property. Fire departments may suggest or recommend alarm and extinguishing devices. They should be sure to recommend Underwriters' Laboratories and Factory Mutual approved devices.

Fire departments should be advised of any changes in the protection of a plant. They should be aware of all sprinkler and water supply impairments in order to reconsider fire fighting procedures.

Industrial fires sometimes require equipment and manpower beyond capabilities of the public fire department and the industry. An example was the recent Houston ship channel

fire where foam was flown in from as far away as Olathe, Kan.

A number of industrial mutual aid programs have been established to assist in these situations. One of the best known programs is that of the Kanawha Valley area of West Virginia. A number of industries, fire, and police departments and other public service organizations have banded together for planned, organized pooling of equipment and manpower for large-scale fires and other disasters.

Periodic drills are held and all involved organizations know exactly what they can expect from the others. Several disasters have proved the value of this program. Public fire departments should always be included in the industrial mutual aid plan.

Our last, but actually the most important consideration, is that of personnel, including the management. If we are unsuccessful in this phase, it will reflect unfavorably on the previous two items. The interest in fire protection shown by management and employees is directly

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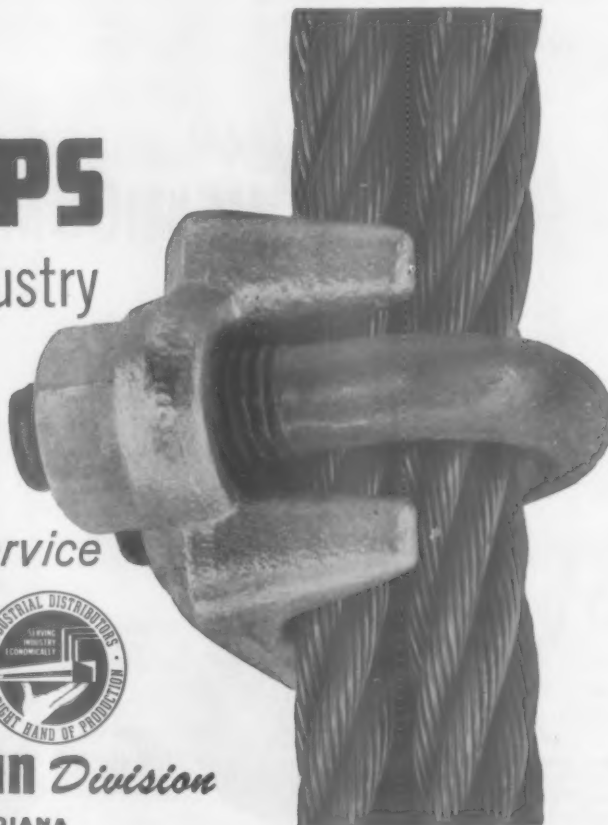


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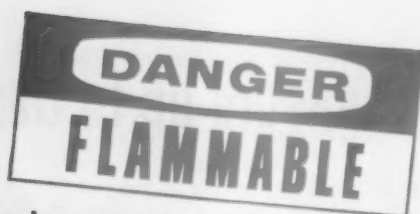


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Fire damage last year was well over a billion dollars! Records show that over 75% of all large-loss fires strike commercial and industrial establishments.

What are you doing to protect your men, money, machines, and materials against fire and explosion? Most plant operators and safety engineers standardize on Spark resistant Ampco Safety Tools in locations where a hot spark could mean disaster. Ampco Safety Tools provide low-cost protection — and are approved by Factory Mutual Laboratories. Meet MIL specifications.

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T-39

related to the effectiveness of the fire program. Without it, improvements in the items already mentioned will be impossible.

Industry must be aware of and acknowledge the fact that fire protection equipment is not just a necessary evil, but that there is a definite place in industry for active fire prevention and protection activities. Too many times management will view the plant's fire extinguishers, pails, and hose racks and complain that these items take up too much valuable space. As a result, the plant's first line of defense is often "lost" under piles of clothing and stock. These devices should be looked upon as an integral part of the plant, placed there for a specialized service.

An alert fire department can, by its actions, cause management to realize that the department personnel is competent to advise in industrial fire protection matters. As we mentioned in the beginning, fire departments often shun industrial plants because of their feeling of incompetency. Industry will be far more receptive when firemen have an appreciation of industrial fire protection.

In a small Maine city, the local fire chief, who thoroughly understands sprinklers, has been successful in promoting the installation of sprinkler protection in a number of small industries in his town. This was done by personal contact and discussion, not by enforcement of law.

A number of fire departments have done a fine job in organizing and training industrial fire brigades. Unfortunately, some fire departments do not practice this type of work. With proper training a fire brigade can be a valuable first line of defense for the fire department as well as an aid in fire prevention.

The responsibilities of a plant fire brigade will vary with the size of the plant and brigade; however, successful programs include definite plans for calling in fire department help. One large midwestern plant uses this criterion in calling the fire department:

"If the fire can't be put out with a coat—call the fire department." Of course a fire of that size can be handled as a rule with one fire extinguisher.

This plant has an effective fire

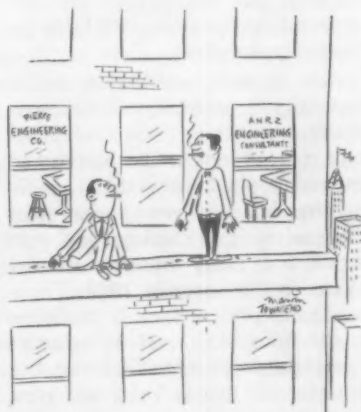
brigade and a full-time fire chief. This gentleman feels that there are two possible questions management may ask him regarding the calling of the municipal fire department in a fire situation:

1. "Why did you call the fire department so soon?" 2. "Why didn't you call the fire department sooner?" He would prefer to be asked the first question rather than the second.

This plant fire chief appreciates the value of good municipal protection. This does not represent the attitude of management everywhere. We have mentioned earlier the reluctance in some places to call the department because of lack of confidence in the abilities of the department to handle industrial fire. Plant management which does not believe in calling the fire department may have other reasons for this attitude. They may believe that fire department response is distracting to workers and that production will subsequently suffer. In a few cases they have believed that firemen might take away secrets regarding processes which would be helpful to competitors.

Many industrial fires spread rapidly due to the nature of the burning material. The midwestern plant we mentioned has a good fire brigade and is protected by a strong city fire department. The fact that this is a good combination was brought out when a fire occurred just after a shift change. The ensuing traffic jam seriously delayed the fire department response, and the plant brigade had the situation well in hand on arrival of the city unit.

Fire department training of in-



"No smoking in your office either?"

National Safety News, September, 1960

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dustrial fire brigades is a two-way proposition. Both the fire department and the fire brigade members stand to benefit. Firemen involved in this training learn some of the hazards in the industry and fire control problems, while the industrial fire brigade members learn some basic skills practiced by city fire fighters.

Some industries have excellent fire training facilities which might be used by city firemen. As an example, in New York City the Consolidated Edison Company's fire training facilities have been used by city firemen for specialized training. In Memphis, on the other hand, selected industrial fire brigade members take an intensified firemanship training program at the City of Memphis fire school. These men are from plants that belong to the Commercial and Industrial Fire Prevention Association of Memphis, a fire department sponsored organization.

No discussion of industrial fire protection would be complete without mention of the extremely important part fire insurance plays in this field. Commerce and industry rely heavily on fire insurance for partial recovery from fire losses. There is no way to measure the tremendous part fire insurance representatives have had in bringing about improved industrial fire protection.

We have reviewed some ways in which fire departments may effectively cooperate with industry. The principles of industrial cooperation have meaning to more fire departments every day as industry builds in small towns and rural areas. Departments adequately equipped for dwelling fires are thrown into responsibilities for protecting large industrial properties.

New hazards, windowless buildings, large floor areas, and increased values are making industrial problems more complex. The loss at one industrial plant fire, the Livonia transmission plant, was greater than the loss in the conflagration that wiped out many business district blocks in Baltimore in 1904. These conditions present a great challenge to the fire service and to industry. Complete cooperation between fire departments and industry will go a long way toward reducing large-loss fires.



## Big Liquor Problem

—From page 27

would only breed more relaxation, Hiram Walker keeps to the strictest standards. Even hearing aids must be safety approved. If a non-approved hearing aid were allowed, a non-approved flashlight would be next, and so on until even unsafe welding equipment was being used.

The medical setup at the distillery calls for a part-time physician and four registered nurses. At least one of the nurses is on duty when bottling operations are under way in the plant. As for speed in giving employees medical service beyond first aid, special stretchers have been designed so that plant layout or equipment can never be an obstacle to removing an injured person and the distillery is only four minutes by ambulance from the nearest hospital.

Heading the volunteer fire department is a man who has shown the courage it takes to fight a distillery fire. Several years ago, Chief Ed Wildeber volunteered to help fight a fire in a distillery in a nearby town. He served with distinction until he was injured by flying debris when a rack house of open-type construction exploded.

Chief Wildeber meets the rank and file workers well and hand-picks his fire-fighters from a long waiting list. His procedure is to go to a department head and see who is qualified. The department manager recommends his most emotionally stable and dependable people. Supervisors and foremen, who already have certain duties in emergencies, are not eligible.

On the manager's recommendation, Chief Wildeber interviews the applicant. He wants to know if the prospect is a volunteer in his community, how his wife would feel about his serving as a fire-fighter, his attitude toward following orders, and his respect for equipment.

The volunteer who is accepted is given 20 hours of training the first year (on company time, not overtime) and an average of one hour per month thereafter. The training at first emphasizes how to prevent and control a fire in the volunteer's own department; which doors and windows to close; how to shut down machinery and air-condition-



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The test shown above, in which a razor blade is drawn sharply across a Jomac glove without ill effect, shows the remarkable cut resistance of Jomac's loop-pile fabric . . . protection that even leather doesn't afford.

Moreover, Jomac gloves wear longer than leather gloves and provide a better grip on oily surfaces. And most Jomacs—like the HR gloves shown above—are reversible . . . so any two make a pair, any pair gives you four working surfaces.

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# JOMAC

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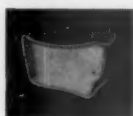
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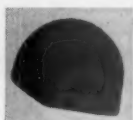
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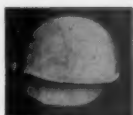
Warmth, durability, comfort and convenience are built into Fibre-Metal's completely new *quality* line of winter liners...for greater worker safety and "work ability." Designed for all safety hats and caps in the field, these winter liners are made of high quality, water-repellent, mercerized and sanforized fabrics...expertly tailored for maximum service life. *Ask your welding and safety supply distributor NOW* for our more descriptive bulletin or just order by model number and size.



**Model MF** Mouthpiece for Models FLF, FLF-I and FLF-Z for use where face protection against cold and wind are necessary. Snap on! Same high quality fabrics.



**Model FLK** (Universal size). 100% Navy Blue wool. Fits all heads. May be used separately or with other winter liners for greatest warmth and comfort.



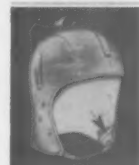
**Model HLP** (Universal size). Features rayon screen laminated within two layers of wet strength paper. Cotton edge binding. Form fitting, highly absorbent, costs very little. For perspiration absorption and for use as a sanitary "visor's" liner.



**Model FLF** (Small and large sizes). For cold to frigid climates. Heavy gray outer flannel, red knit lining. Long neck for extra wind protection. Chin strap with adjustable snap. Provision for snap-on MF Mouthpiece to give additional face protection!



**Model FLF-I** (Large size only). Same as FLF but includes an extra urethane inner lining for maximum warmth in ultra-frigid climates. Provision for MF Mouthpiece.



**Model FLF-Z** (Small and large sizes). Same as FLF but features zipper detachment of ear flap and neck section. For mild to frigid climates. Chin strap with adjustable snap. Provision for MF Mouthpiece.



**Model FLF-E** (Small, Large and Extra-Large sizes). For use with all types of electrical safety hats and caps. Same as FLF but NO METAL PARTS! Long neck for extra wind protection.



**Model FLN-E** (Small and Large sizes). Has yellow Neoprene-coated outer fabric for exceptional warmth retention and resistance to all wind and weather (sleet, snow, rain!) conditions. EXTRA long neck. NO METAL PARTS makes it ideal for use with electrical safety hats and caps.



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ing equipment and so on. Later he is given general outside training in such fundamentals as hose handling. A recruit's early duties also include helping Chief Wildeber check and refill extinguishers, perform hydrostatic pressure checks on hoses, and make annual water flow tests.

Of the 30 fire companies, one is a specialist company composed entirely of maintenance workers. These specialists meet monthly to apply their knowledge to safety subjects. For example, the electricians know how and when to break power and discuss doing it under emergency conditions. They know it is desirable to kill power for the greater safety of hose handlers, but in some situations it could disable elevators and cut off well water.

Other maintenance men visualize new equipment needed. Suggestions come freely as the specialists develop the answer to the question—what should be done if that building began to burn.

Since no one can predict who will have the stamina and the courage to stick it out in a really bad fire, the 30 fire companies are heavily staffed with a complement of 168 men. If a fireman is called while off duty, he is paid. His compensation and accident and health insurance covers his fire duties, too. All members belong to the Illinois State Firemen's Association.

Being a member of the volunteer fire department isn't all hard work, though. They are entertained at an annual meeting, and all enjoy a special fellowship with their co-workers who have accepted this important voluntary assignment.

Though the chief guard and the fire chief work closely together, their departments are entirely separate, for their men would be entirely too busy at a fire to do each other's work. The separateness also shows its value in such functions as sprinkler valve checks. The fire chief makes a check once a week, and a plant guard follows with a second weekly check.

The guard's daily report is made up in such a way that a column of ditto marks just won't do. Each question requires thought, and the form is changed often so the guard has to think about each question.

A typical list of items to be checked is: fire hazards or smoking

violations; fire doors, exits, hydrants, or valves blocked; sprinkler valves shut; low temperature inside buildings; accident hazards; infraction of plant rules regarding parking and speed; doors, windows, or barges secured; gates, fences, and railroad cars secure; unusual sewer conditions; waste of light, water or power; unsanitary or unsightly conditions; trucks chocked at loading docks; aisles and walkways clear of obstructions; leakage from pipes.

If a guard finds nothing out of order and has no comments to make for an extended period, he is asked why. His superiors may then train him to look more closely while he makes his rounds.

The guard force is alerted whenever cutting or welding is to be done. A "Welding and Flamework Permit" is issued by the guard at the front gate before the job can be started. Before the work starts, guards check the area for flammable vapors or liquids, dusts, or loose, combustible material. Wet burlap must be placed on all tank openings and on and around any valves where alcohol might seep. If exposed combustible material can't be moved, it must be covered with fire-resistant tarpaulins, and a guard must stand by with an extinguisher or water hose. The guard must also remain at least 30 minutes after completion, and these same precautions must be taken if a flame is used near wooden construction.

In some areas, (where the product is distilled, for instance) no welding at all is allowed. The equipment is designed so welding is not necessary. Tubing is joined with flanged joints rather than the simpler sweated sleeve joints which require flame heating. As a result of these precautions there have been no welding and cutting fires for ten years.

Hiram Walker can also count on a well-informed municipal fire department to help. Every two months Peoria fire inspectors walk around the plant with Chief Wilder, and each year, 50 to 60 local firemen make a plant tour and have lunch with the company's fire prevention specialists. Because these practices have been going on for years and many of the firemen have been to the plant numerous times, city fire fighters are unusu-

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...test any piece of safety equipment you now use, against its Safe-Hi counterpart. If your present equipment holds up safety-wise against Safe-Hi, I will pay you double the purchase price of your equipment.\* If it fails where Safe-Hi Equipment

holds up, you are under no obligation—save your moral obligation to equip your men with the *best* safety equipment available.

To arrange for such a test\*—at our expense—write to me direct. Take me up on this challenge! You have nothing to lose—and you may save employees' lives. Write me TODAY!

*Clarence W. Rose* MA

\*These tests to be conducted under agreed prearranged conditions and under your control.

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Veterans of Safety

### The Case of the Belt that

### Pulled the Man—and his shoulders!

The equipment was strong enough, but as the workman was pulled through the narrow shaft to safety, his arms were pulled behind his back—dislocating his shoulders! His painful experience was caused by a wrist rescue belt that *pulled the wrong way*, twisted his arms and shoulders and hospitalized him!

#### Safe-Hi Wrist Rescue Belt

...is safety-engineered to pull a man through a small opening. Full freedom of movement is permitted, but Wrist Rescue Belt will pull the arms of an unconscious man up forward from any position, preventing shoulder dislocations. Safe-Hi Safety Equipment is safe—just as safe as continuous research and a lifetime of experience can make it. For complete information on Safe-Hi Wrist Rescue Belts, Lanyards, Shock Absorbers, Belts, Ladder Shoes...write for FREE catalog.

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ally well prepared to take immediate, effective action in event of a fire.

The two groups work closely on civil defense, too. They never know when many helping hands might be needed. In case of an alert, though, everyone at the plant would be evacuated. With more than a million barrels of whiskey around, it would be safer to be somewhere else.

Hiram Walker Volunteers are well equipped. They have the latest and most useful equipment. Some is simple, like round bottom buckets outdoors in the cooperage lumber storage areas. Most is not so simple. There are 1045 portable extinguishers.

The plant fire department has its own pumper. The men are supplied with self-contained breathing apparatus for every conceivable situation. In all, there is \$80,000 worth of equipment without counting sprinkler equipment. Alarms in isolated locations such as the Photo Lab and toilets are battery operated and are connected with the main alarm system. A power failure or shutoff would not trap anyone in such a location.

For more than a quarter of a century now, Hiram Walker employees have cooperated in their plant's safety and fire protection program. They have accepted the proposition that their paychecks depend on safety, and that being an employee of the world's largest grain distillery involves some volunteer safety assignments by a few of the work force and safe working practices by everyone, every working day.

### Accidents on the Farm

Accidents in 1959 killed 11,700 farm residents and injured a million.

From 1950-59, 11 million farm residents suffered injuries disabling beyond the day of the accident, and 130,000 farm residents were killed in accidents.

The No. 1 cause of disabling injuries to farm residents during the decade was home accidents. They accounted for five million injuries.

From *Accident Facts—*  
1960 Edition.



## Off the Job

—From page 60

grams to include off-the-job accident prevention. Our industry is unusually well equipped to render this urgent public service through its established safety departments. We urge all construction companies to join in this effort. The benefits are both numerous and varied.

Our most recent experience in extending our own safety program met with excellent response, not only from our own employees but from newspapers and public officials as well. In addition, it elicited a spirit of safety consciousness on the job as well that brought renewed and lively interest into our entire safety program.

The construction industry and construction workers have always displayed a fine spirit of cooperation toward safety on the job. They have the understanding and the will to earn for themselves as fine a reputation in road safety as the trucking industry and truck drivers have earned for themselves.

Ours is a hazardous industry, with a not-too-good accident record. By taking this opportunity to help cut down the highway toll, we will not only be performing a public-spirited duty, but we will also be improving our own accident records. The important fact is that off-the-job safety improves on-the-job safety as well.

Gene Wasserman

*Wasserman carries his safety ideas into conversations with safety specialists in an insurance firm.*

July 14, 1960

Mr. Jack French,  
Safety Engineering Dept.,  
Lumberman's Mutual Casualty Co.,  
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Every possible effort that we can muster to help you to obtain the full cooperation of every single company that you contact will be at your disposal. If you learn of a company that needs help evenings, I will help. If you learn of a company that needs help printing, our Multilith machine will be available and I will personally work on it to help them.

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National Safety News, September, 1960

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personally assured by Registrar Clement A. Riley, with whom I have spoken about you and the cooperation of your company in this effort, that any time I want him to address any group that is interested in the furtherance of this campaign, I should call him and he will be there within 20 minutes.

I cannot possibly overemphasize the urgent need for our help in cutting down the shameful slaughter on our highways. These companies,

like our own, with established safety departments are in a unique position to be of help to our public officials. It is our clear duty to do so. Furthermore, the benefits to the companies themselves are both numerous and varied. A renewed and lively interest will be brought into their entire safety program, as you are aware that it has been brought into ours.

I am confident that this program will have a very great effect on the

driving habits of the many thousands of employees that it will reach, and that it will play a large part in the reduction of deaths and injuries on our highways.

Gene Wasserman

*French passes his enthusiasm along to an official of Lumberman's in Chicago.*

July 18, 1960

R. L. Moore,  
Safety Engineering Dept.,  
Lumberman's Mutual Casualty Co.,  
Chicago.

Bob, once again I would like you to be aware of the tremendous effort that Gene Wasserman . . . is making in promoting safety not only among the employees of his own company but . . . among those outside his company.

The effect of [Mr. Wasserman's initial letter to his firm's workers] promoting off-the-job safety was so pronounced and the safety methods so well received that in discussing this with Mr. Wasserman, we both felt and agreed that perhaps we could make a special effort to promote this type of off-the-job safety among other insureds, particularly among contractors, since this is the field with which Mr. Wasserman is best acquainted.

I am quite sure that our company will cooperate in this effort, particularly since we plan to do the same thing for the coming Labor Day week end. By that time we hope to have convinced several of the contractors in this area to write the same type of letter, and in doing so we will reach many employees personally as well as their families in trying to drive home this safety message for these terrible holiday week ends.

I am sure that if you pass this material along to our own central safety committee that they will also be willing to help out. Perhaps, in your own area this same sort of thing can be done, all of which will help swell the total of personal contacts in behalf of highway safety.

All in all, Bob, I think this certainly shows and at least highlights the intense effort that this particular fellow is making in his role as safety director for this insured. It must be appreciated that he is the chief cost accountant for this large construction firm which at the present

**Stop hearing loss  
before it occurs . . .**

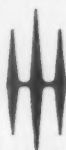


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time is quite busy, and most of the time he devotes to the safety effort is on his own time in the evening and on week ends.

J. P. French

Meanwhile, Riley of the registrar's office urges Wasserman to meet with state officials at a convention on highway safety.

July 18, 1960

Dear Mr. Wasserman:

Congratulations on the new policy of the Wexler Construction Company, Inc., in extending your general safety program to include highway accident prevention.

You have inaugurated a great public service in joining our highway accident prevention team, and we are confident that you will prevent serious injury to some of your employees by this action.

Your interest in our lifesaving program is heartwarming. The Massachusetts Highway Safety Committee is now planning a "grass roots" meeting in the interest of highway accident prevention for the County of Norfolk. When our plans are completed, we hope you will be able to attend the Norfolk County con-

In the article, "Mower Accident Proves House Current Deadly," (July 1960 NSNews "Off the Job" department) the text said:

"The average household electrical circuit is designed and fused to carry up to 15 amperes of electricity. Medical researchers have shown that a current of approximately 16 milliamperes—about a thousandth of the capacity of the house circuit—can cause a man to freeze to a shorted electric wire or appliance.

"In this condition he will be unable to let go of the wire, and unless help arrives to break the circuit, the person can be electrocuted. The safe "let-go" current for women and children is about 10½ milliamperes."

To correct any misunderstanding, it might be pointed out that the generally accepted let-go current for men is 9 milliamperes and for women, 6 milliamperes. The freezing current range begins at 10.5 milliamperes for women and 15.8 milliamperes for men.

vention in the interest of accident prevention on our highways.

Clement A. Riley

Finally Wasserman comments on the Wexler firm's approach to safety and his primary job's relationship to the company's official attitude.

August 3, 1960

Mr. Harry Johnson,

For several years I have been in charge of the Cost Department of this company. An indication of the great importance that Mr. Leo A.

Wexler, president of this company, attaches to safety can be gained by the fact that he has made the carrying out of our safety program the function of the Cost Department.

His theory is that there is a definite relation between the cost of construction and the safety record of a job. Furthermore, he visits each job in person to see that accident prevention is being practiced as an integral part of efficient, low-cost production.

The extension of our safety pro-

**It's as simple as this . . .**

The world's finest skin cleanser + a dispenser for every need = health and convenience for your employees

. . . efficiency and economy for you.



No. 90 Vi-Lan Dispenser  
96 fluid oz. wall dispenser



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96 fluid oz. portable dispenser for bench work, portable work carts, outside service trucks, oil rigs, work shops, etc.

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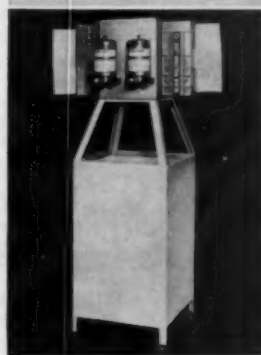
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gram to include off-the-job highway safety has revitalized our entire program and instilled a spirit of safety consciousness in every employee of our company that could not have been obtained in any other way. Furthermore, the slaughter on our highways is a national disgrace that cries out for action. The need for help by American industry is urgent, and we do have a lot of help to offer.

Gene Wasserman

One man's effort! It can be yours!

## Sign Is Double Edged Sword of Safety

Much like a double-edged claymore, this twin-messaged safety sign gets workers going and coming at Continental Can Company's Hazel-Atlas Glass Division plant in Plainfield, Ill.

Aimed both at on-job and off-job accident prevention, this appeal for safety has been devised and installed by the plant's training supervisor, Richard Guss.



Above: Coming. Below: Going.



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When the lights go out, Exide Lightguard® goes on automatically. It protects you from panic, damage and pilferage in your factory warehouse and office when power sources are interrupted. Plugs into a regular outlet—charges itself automatically—provides light when you need it the most.

Three models cover all your needs. Be protected—write for full details. Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 20, Pa.

# Exide®



## Showmanship Sells 'Em!

—From page 46

Attention was then directed to being heard. An ordinary cowbell blasted through the production noise level. Its strangeness drew attention. A cowbell in a factory is a sharp, alien sound—like a shotgun blast in a library.

One more eye catcher was needed—something which explained at a glance the reason for the safety shoes. Crutches, a "don't let this happen to you" sign and several bandaged volunteers did the trick.

When the cart entered a department with lights flashing and cowbells ringing, heads turned and men stared in wonder. Their eyes really popped when they saw the limping, groaning, crutch-supported trio and read the warning sign.

"Hart's Cart" was a smashing success. Workers crowded around, partly to joke with their "injured" fellow employees, but mostly to look over the safety shoe display. Orders were taken at a steady pace during the initial three-day period.

"We had to turn down many employees who wanted to buy shoes right from the wagon," said Hart. "We'd have been out of business before lunch if we'd made direct sales."

Normally, about 15 persons a week drop into Hart's office to buy safety shoes. In two days more than 60 ordered shoes from the cart.

Many employees drop by and ask for a particular type of shoe they saw on the cart.

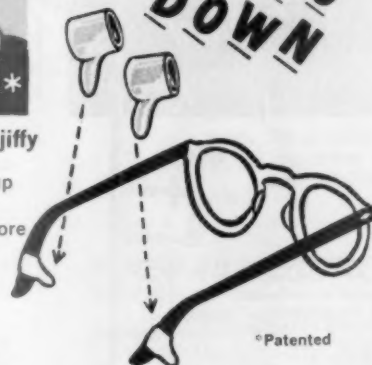
"We'll probably sell about 125 more pairs of safety shoes because of this stunt," Hart remarked. "That means protection for another 1250 toes. That's cheap protection when you consider that one toe injury would cost a lot more than this whole program."

Hart and his committee were so pleased with the results that they plan to use this promotion, with some interesting variations, at least once a year. The response from workers, supervisors and general foremen virtually guarantees the success of "Hart's Cart" in other divisions of the corporation.



Soft elastic tabs — attached in a jiffy

- Eliminate the necessity of pushing up ever-sliding glasses
- Free both hands for safer, faster, more efficient performance
- Maintain correct lens focus
- Relieve eye-strain
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Write on your letterhead for free sample and industrial prices.

Manufacturers of optical comfort products since 1934

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Circle Item No. 57—Reader Service Card

National Safety News, September, 1960

## WASHINGTON

finest quality COTS and STRETCHERS for emergency use

• Washington's complete line of ambulance cots, stretchers, cot fasteners and other emergency equipment has featured the finest craftsmanship and highest quality in the industry, for over 33 years! First aid and rescue squads, fire departments, factory hospitals and first aid rooms have always depended on Washington for their complete needs. Washington "safety engineered" equipment is fully guaranteed—gives you the best for the same price as ordinary equipment.



**MODEL 54-L ELEVATING COT**—A Washington exclusive design. Elevates to full hospital bed height, yet lowers to only 9 1/2" high! A perfect cot for vehicles with limited head room and overhead hanging stretchers. Here's all the advantages of an elevating cot—plus extra head room when lowered.



**MODEL 21-L LOW COT**—Only 8 1/4" high! A really low cot for cars with less head room or with overhanging stretchers. Another Washington EXCLUSIVE design, to meet changing car conditions.

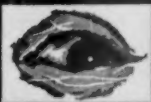


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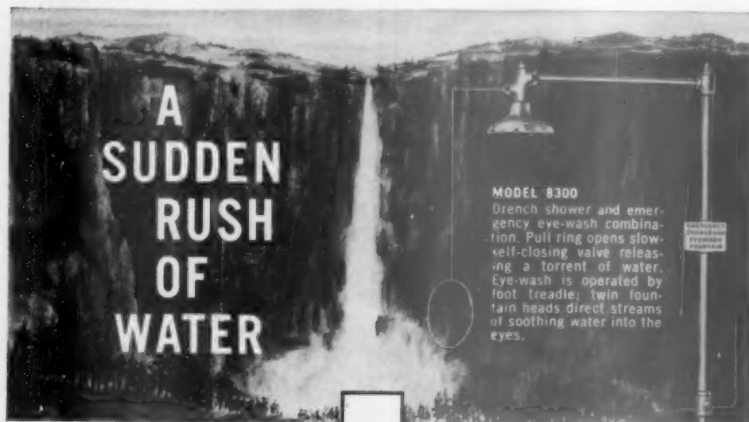
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## They Built It Themselves

—From page 50

10 ft. at the base and has an 8½-ft. ceiling. The roof is 38 by 10 ft., spreading out to give a feeling of roominess inside.

The trailer has a 14-ft. conference table, hinged in the center and built on collapsible legs, that folds into a cabinet when not in use. There are also a coat closet and cabinets for storing folding chairs and equipment.

Audio-visual devices help put across safety pointers, including a 35mm. slide projector with synchronized sound tape, a 16mm. movie projector, and other projection equipment. A telephone plugs into a jack system at four locations around the plant set aside for the "mobile auditorium."

The outside of the trailer is aluminum sheet produced at the plant. The roof is one piece 10 ft. wide and 30 ft. long. The doors are of original design.

The trailer is in almost constant use. Each of the 2,200 employees is scheduled to participate one hour each month in a safety meeting in the trailer. Sometimes he is shown movies of himself at work to help pinpoint better safety habits. Frequently, programs are conducted by supervisors.

This trailer is offering workers down-to-earth, personalized safety discussions and analyses of their jobs.

Since the new program started, there have been two instances where eyes of employees were saved from injury because they had learned proper eye protection procedures in the plant's safety training course.

In another case, one employee injured a foot through unauthorized use of equipment. When this was pointed out in safety discussions, employees voluntarily enforced equipment use rules among themselves. And employees have made suggestions for improved safety which have been adopted throughout the plant.

But the trailer has become much more than a safety training device. It is symbolic of the dignity of the worker and the responsibility each employee in an operation has for others in the plant. This trailer is doing a real safety job for the company.

# KEEPING POSTED!



Watch this space each month for late news on NSC services. Use the handy Order Form to request sample copies of publications listed in this issue or to order safety merchandise.

SEPTEMBER  
1960



## WINTER DRIVING TESTS PROVIDE NEW DATA ON COLD WEATHER HAZARDS

During the coldest part of the past winter, the National Safety Council's Committee on Winter Driving Hazards journeyed up to the frozen lakes near Clintonville, Wis., to conduct its 15th annual Winter Driving Hazards tests.

These tests were begun in 1939 and have yielded much important information for automotive manufacturers, highway and street engineers, driver trainers, and for individual drivers. From hundreds of pages of technical test data, the National Safety Council has prepared two new training booklets that can help the driver of any type of vehicle—passenger car, truck, or bus—have a safer and more trouble-free winter.

### BE A WINTER WINNER

For passenger car drivers, a non-technical presentation of important facts about winter driving. Discusses types of tires and chains, road conditions, making safe starts and stops, and avoiding — and maintaining control in — skids. Includes a quiz on winter car operation.

**399.59**—Be a Winter Winner (Passenger Car edition)—cost per booklet: 50—\$.065; 500—\$.055; 1000—\$.05; 5000—\$.04; 10,000—\$.037; 20,000—\$.035.

### KEEP ROLLING WITH SAFETY IN WINTER WEATHER

Special edition for tractor-and-trailer and other commercial-vehicle drivers. Discusses front-wheel braking, jackknifing, use of sanders, control of loaded and empty vehicles, gearing down, and other technical problems of the professional driver of heavy equipment. Many charts and schematic drawings. Sixteen pages 5½ x 8½.

**399.58**—Keep Rolling with Safety in Winter Weather (truck-bus edition)—Cost per booklet: 10—\$.17; 50—\$.10; 500—\$.085; 1,000—\$.075; 5,000—\$.065; 10,000—\$.06.



**A NEW FILM ENTITLED "WINTER DRIVING"** has been produced by the Council's Committee on Winter Driving Hazards and the U. S. Bureau of Public Roads. Filmed in color at the site of this year's Winter Driving Hazards tests, the 23-minute film is a thorough presentation of safe winter driving techniques based on twenty years of committee experience. The film is an excellent companion presentation to the Winter Driving Booklets described above and is especially appropriate for driver training classes, service and fraternal groups, fleet drivers and off-the-job safety programs.

**379.32** (Purchase)—Each: 1—\$125.00

**379.72** (Rental)—\$11.00.

**379.72** (Preview)—\$11.00.

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\*National Safety Council Members receive 10% discount on these prices. Quantity prices apply only on a single shipment to one location. Please enclose check or cash with orders less than \$3.00. Prices subject to change without notice.



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1859-A

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T-1994-B

17" x 23"

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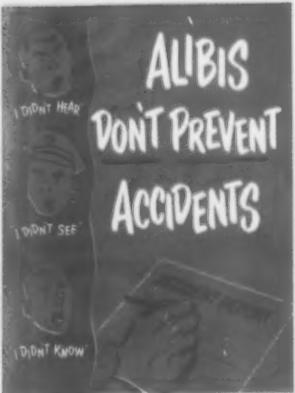
Ask the Man Who Had One!



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1701-A 8½" x 11½"

## ALIBIS DON'T PREVENT ACCIDENTS



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V-1978-B 17" x 23"

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to conditions



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T-1992-C 25" x 38"  
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## SEND FOR FREE SAMPLE COPIES OF EMPLOYEE TRAINING



Employee education booklets are a basic part of your safety program. The National Safety Council publishes a wide variety of such booklets designed to shape sound safety attitudes or instruct your employees in the safe practices related to their work or off-the-job activities. Several recent booklets are described below. Sample copies of these booklets may be obtained by circling the code number on the order form or they can be ordered in quantity for prices shown.

### BE A WINTER WINNER

A new 16-page booklet, printed in attractive two colors, discusses winter driving hazards. Explains how to drive safely in spite of such hazards as determined in the most recent tests conducted by the National Safety Council's Committee on Winter Driving Hazards.

STOCK NO. 399.59—Cost per booklet: 50—\$.065; 500—\$.055; 1,000—\$.050; 5,000—\$.040; 10,000—\$.037; 20,000—\$.035.

### KEEP ROLLING WITH SAFETY IN WINTER WEATHER

Special edition of the winter driving hazards booklet for tractor-trailer and other commercial vehicle drivers, discusses technical problems of the professional driver of heavy equipment. Many charts and schematic drawings. Sixteen pages, 5½" x 8½", two color.

STOCK NO. 399.58—Cost per booklet: 10—\$.17; 50—\$.10; 500—\$.085; 1,000—\$.075; 5,000—\$.065; 10,000—\$.06.

### WHERE DO YOUR KIDS PLAY

A booklet intended to stimulate parent's thinking about the play environment and habits of their school-age children. Each page shows actual photographs of children playing in typical but extremely risky places. The last two pages of the booklet discuss organized and supervised play areas for children. There are eight pages with two-color printing.

STOCK NO. 599.34—Cost per booklet: 50—\$.06; 500—\$.055; 1,000—\$.05; 5,000—\$.04; 10,000—\$.037; 20,000—\$.035.

### ACCIDENTS IN THE OFFICE

Brightly colored and presented in an eye-appealing way, this new booklet will help alert your "white collar" staff to the common hazards found in their occupational environment. "Accidents in the Office" fills a long-felt need. Eight pages, 3¾" x 8". Two-color illustrations.

STOCK NO. 195.58—Cost per booklet: 50—\$.06; 500—\$.05; 1,000—\$.045; 5,000—\$.043; 10,000—\$.042; 20,000—\$.04.

### BEFORE IT'S TOO LATE

Dedicated to "all brave firemen who try to arrive before it's too late," this booklet tells the tragic story of home fires and how to prevent them. Real-life pictures taken at the time of a fire help dramatize the message. Twelve pages, 3¾" x 8". Two-color photographs and illustrations.

STOCK NO. 599.82—Cost per booklet: 50—\$.07; 500—\$.06; 1,000—\$.052; 5,000—\$.046; 10,000—\$.042; 20,000—\$.04.

### A SIMPLE DO-IT-YOURSELF PROJECT

The safety of a worker's fingers—industry's best production tools—is the subject of this booklet. Cartoons and brief copy help remind workers of the do's and don't's of hand safety. Eight pages 3¾" x 8". Two-color illustrations.

STOCK NO. 194.22—Cost per booklet: 50—\$.057; 500—\$.048; 1,000—\$.041; 5,000—\$.033; 10,000—\$.031; 20,000—\$.029.

Use the handy Order Form to request free sample copies or to order booklets in quantity lots. For listing of additional booklets available, write —



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	399.58	Keep Rolling with Safety in Winter Weather (truck- bus edition)
Purchase	379.32	FILM: Winter Driving
Rental	379.72	
Preview	379.72	

**PREVIEW**—If you wish to preview this film prior to purchasing, check the "Preview" column. The film will be sent to you by the Council's rental agent, and should be returned to them following your preview. A new film will be sent when your purchase request is received. No preview fee will be charged if your purchase request reaches us within 30 days after you received the preview print. The regular rental fee of \$11.00 per week per film will be charged if you do not purchase the film. Film prices net—no discount.

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1845-A \_\_\_\_\_  
1859-A \_\_\_\_\_  
1879-A \_\_\_\_\_  
1970-B \_\_\_\_\_  
1973-A \_\_\_\_\_  
T-1993-A \_\_\_\_\_  
T-1992-C \_\_\_\_\_  
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## BOOK 10, FIVE-MINUTE SAFETY TALKS FOR FOREMEN.

The latest volume in the Council's popular series of safety talks for general industrial use. Written by Robert L. Moore, a former member of the NSC and an experienced safety engineer who is himself a specialist in holding safety meetings. The 52 talks are organized into these subjects: motivation, machines and tools, materials, movement, managing men, and miscellaneous.

152.11 Book 10, FIVE MINUTE SAFETY TALKS.

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## Sanitation's Objectives

—From page 19

work load must be clearly defined.

3. *How can management secure efficiency through selection and use of proper methods, materials, and equipment?*

Management as a whole, I believe, is not aware of the progress which has been made in standardizing cleaning methods. Methods necessary to the maintenance of structural surfaces—floors, walls, windows, ceilings, and their appurtenances—have been studied thoroughly by industrial, governmental, and consulting groups and have been published extensively in the trade press.

This is true of those broader, more applicable procedures which have to do with the cleaning maintenance of areas common to industrial, commercial, and institutional buildings—office areas, lavatories, locker and shower rooms, cafeterias, lobbies, and corridors. That this information has not been properly

disseminated is traceable to the fact that its development has been publicized in specialized and restricted treatises. Unfortunately, it has not been brought together in one related treatment or textbook which can serve the needs of formalized training. This we have been doing at the Port Authority for several years.

The surfaces which distinguish one industrial plant from another, as far as cleaning maintenance is concerned, are confined to those of the specialized equipment necessary for individualized operations. It is in this aspect of plant cleaning, perhaps, that some confusion should be dispelled. In both private and public discussions I have been confronted by the outraged general maintenance superintendent who protests of the complications that result from mechanical and production mischance or mechanical and production priorities, and their effect on cleaning methodology and labor allocation in the organized house-keeping program.

In all too many instances, these



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gentlemen have terminated their protests with a solemn declaration that an organized method and labor allocation for equipment cleaning are not practical in their situations.

At the risk of inciting the readers to riot, I should like to state that experience has exposed me to the cleaning of conveying equipment, milling machinery, cookers, vats, heat exchange devices, materials-handling setups, and bottling line and package systems, many of which were operated on a 24-hour basis and subject to all the normal operations from mechanical failure, production emergencies, and spillages.

This exposure has not convinced me of the hopelessness of the situation; rather, it has served to build up the conviction that with study, application, and perseverance, the cleaning of processing and manufacturing equipment can be standardized for the individual plant, scheduled in a flexible manner, and labor for its performance predetermined.

It seems academic that standardized methods will not long remain standard unless specification and approval of materials and equipment used in the operations is vested in the methods setter. Structural and equipment surfaces in the industrial plant cover a wide installation of chemically and physically different materials—painted surfaces, concrete, finished stone, ceramic tile, polished metal, plastic, rubber, and asbestos.

The chemicals individually suitable for their cleaning run the gamut of inorganic and organic make-up. It is necessary, therefore, that their specification and approval for purchase be handled by someone with both a cleaning and chemical background, and whose job responsibilities include an awareness of new developments in the field.

Recently I had the opportunity of participating in a panel discussion on this subject with representatives of large industrial, institutional, and governmental organizations. There is almost unanimous agreement regarding the proper approach to material and equipment control as it affects sanitation operations. All organizations rely on the institution of at least three procedures in the approval process:

1. Use of written laboratory specifications for preliminary protective and screening purposes exclusively.

2. An emphasis on field or performance tests to determine the effectiveness of materials and equipment.

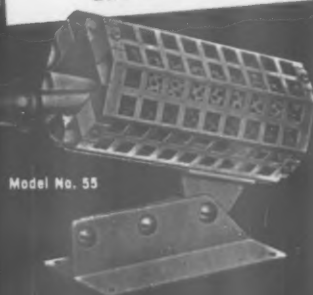
3. Reference research for the evaluation of new products.

The system now in effect at the Port Authority embraces all of these procedures. The supervisor of cleaning standards is charged with the responsibility of approving and specifying materials and equipment. He discharges this responsibility through a monthly *Approved Products List* to the purchasing department and interested line personnel. Approval of a product can be contingent on meeting preliminary requirements in a written specification, successful completion of a performance test, or, in a few unusual cases, solely on reference research.

4. How can management plan systematic maintenance and gear it to plant needs?

Systematic maintenance geared to plant needs, in its simplest terms, means that the work load is divided

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equitably and efficiently among the workers, and that the order and frequency of performance have been prescribed. This is accomplished in the *Written Work Routine*.

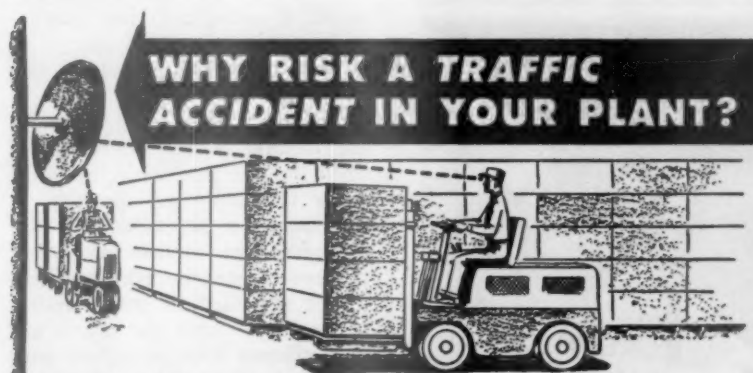
It will be noted that *equitable* and *efficient* division of work can be accomplished only if the divider has an appreciation of the time required to perform sanitation tasks. The employment of standard times based on standard methods is thus indicated. This has been accomplished in many ways, more often than not unformalized, with a great deal of confusion as to the proper approach.

One system, widely publicized but, in my opinion, cumbersome and impractical, entails the establishment of unit-times for all pieces of equipment, the inventorying of all similar equipment, and multiplication of the unit-times by the number of items in the inventory. Such a system is cumbersome and detailed in paper work, and, because it is not based on the way the work is performed, it is difficult to sell to the workers.

A second system, which establishes flow times based on the continuity in which an operation is actually performed, seems preferable. For instance, the time for dusting one desk, one chair, one file cabinet, one piece of plant equipment, are not determined. Rather, a flow time expressed in terms of minutes per thousand feet of office or plant space is determined for the single operation of dusting all equipment. Other standards are set similarly for the remaining operations.

In office cleaning, this would include the ash tray-waste basket operation and the dust mopping or treated sweeping of resilient floors. Such a set of standards can then be combined to represent the entire daily cleaning routine, as illustrated:

Operation	Minutes per 1000 sq. ft.
Ash tray-waste baskets	5
Dusting office equipment	15
Dust mopping or treated sweeping of floors	12
Allocation of time at end of shift for periodic jobs	5
Combined time for routine office maintenance	37



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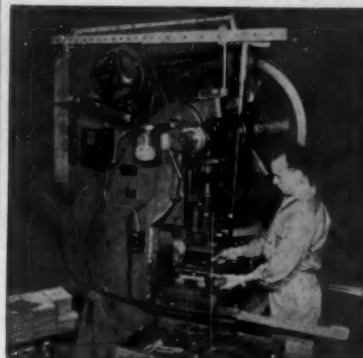
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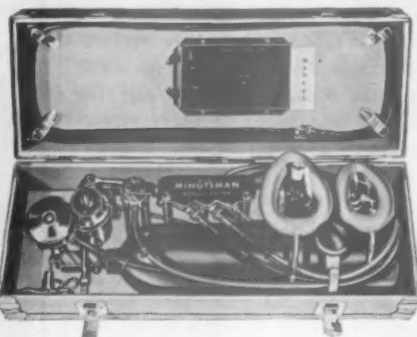
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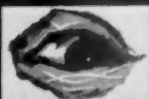
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Such a standard is used by the Port Authority in dividing the routine work load of routine office cleaning in the 300,000 sq. ft. of space in their building at 111 Eighth Avenue, New York. Similar systems have been worked out for allocation of cleaning work in lavatories, terminal areas, food processing plants, and school classrooms. The routines not only define the work to be covered in a work day but also the order in which the work is to be carried on and, in the case of periodic work, the frequency.

**5. How can management train and supervise cleaning maintenance labor?**

The primary responsibilities of sanitation supervision are twofold: (1) To train the worker in standard methods (2) To follow up and see that the work load as allocated has been met. This concept presumes that management has provided the supervisor with a program made up of engineered work routines based on standard methods and labor allocation. Divorced from standard-setting and program-making responsibilities, often mistakenly imposed by management, supervision, if numerically and qualitatively adequate, can discharge its primary responsibilities of training and follow-up.

Training the worker in the standard method is best accomplished when the operator learns by doing under the on-the-job direction of the sanitation supervisor. In this procedure, the services of an experienced, well-coordinated employee are used in demonstrating to the new worker the easiest and most efficient ways to perform each operation. The trainee then performs the work under the direction of the supervisor who explains the purposes of the tools and materials and offers constructive suggestions concerning the movements of the trainee.

Under certain circumstances there is justification for formalized group instruction. Such an instance would be the introduction of a new set of tools or materials or a change in method. Explanation and training can be dispatched expediently on a group basis preliminary to the more thorough individualized instruction in the on-the-job relationship between supervisor and operator.

Pet peeves of the supervisor relative to the shortcomings of his staff can also be brought discreetly to general attention in brief group meetings at the beginning of the work shift. Another method of accomplishing the desired results is the posting of cartoons or bulletins describing the don'ts of sanitation on the bulletin board.

Examinations, conducted with a view to filling supervisory vacancies, can be an effective instruction tool. Dates for such examinations at the Port Authority are posted on the bulletin boards and staff members are invited to participate. Illustrated manuals are available to applicants and help is extended by the supervisory and administrative staff.

Until recently, the cost of making films for employee training has been prohibitive. However, costs have gone down considerably in recent years and company-made moving pictures showing standard methods will undoubtedly be one of the most effective training tools. There is little likelihood, however, that even this medium can match the effectiveness of personal trial-and-error in on-the-job instruction.

Of equal importance is the supervisor's persistence in following up instruction. As with all types of supervision, results will depend to a great degree on the maturity, objectivity, and leadership qualities of the supervisor and his ability to meet the work load through intelligent utilization of his staff.

6. How can management exercise surveillance of other departments,



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National Safety News, September, 1960

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materials, and products as to significant sanitation factors?

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This has long been recognized as one of the most difficult problems in the field. It embraces a number of considerations, tangible and intangible, and requires more than a cursory study. Let us concentrate specifically on the most important part of the inspection problem—the appearance of structural and equipment surfaces.

The most practical unit for creating a standard against which current levels can be compared is room or area appearance. Over-all room or area appearance depends on the sum total appearance of all structural and equipment surfaces.

Structural surfaces can be classified as floors, walls, windows, ceilings and, for convenience, light fixtures. Equipment surfaces can mean lathes, grinding machines, drills and presses in a machine shop; fillers, labelers, and packers on a bottling line; commodes, urinals, and wash basins in a lavatory, or desks, chairs, and file cabinets, in an office.

The appearance of these surfaces depends not only on cleanliness but also on order, repair, and finish. We see, then, that there are six types of surfaces to be inspected, and that each type must be inspected with three considerations in mind. This means that a fully qualified evaluation of a room or area appearance depends not on an impulsive horse-back judgment but on 18 separate considerations.

On the basis of this reasoning and realization there was developed some 14 years ago at the Industrial Sanitation Research Foundation in Louisville an inspection form which has since been adapted with variations by many industrial and institutional organizations.

The form is used for rating one area at a time. The six types of surfaces are listed vertically. Horizontally, opposite each, are three boxes for cleanliness, order, repair, and finish.

Percentage weights are given to each of the 18 considerations, totaling 100 per cent, or absolute appear-



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ance. A scale—excellent, good, fair, poor, and very poor—appears in each box for rating purposes. Each has a numerical scale, to encourage the greatest degree of objectivity.

On the back of the form is a definition of excellent, good, fair, poor, and very poor to guide the rater in his evaluations. Since my job as supervisor of cleaning standards is concerned primarily with cleanliness, we at the Port Authority have included a cleanliness score or level in addition to the appearance score in the original form.

Standard levels can be arrived at in different ways, depending on how high a level management wants to maintain—and how much it is willing to pay. Standard levels can also be established for different types of areas. For instance, lavatories, cafeterias, and locker rooms may be set as high as 90 per cent; shop areas and garages as low as desired.

At the Port Authority, we have established the lowest degree of "good," arithmetically is 74 per cent, as our standard cleanliness level. We then report area levels in three groups: 74 as "standard or above," 66 through 73 as "slightly substandard," and 65 or below as "definitely substandard."

Such evaluations, made by a trained rater at the staff level, keep management apprised of our current situation, and also, through written comments on each form, serve as a follow-up tool for line supervision. Most important to me, as the rater works under my supervision, it serves as my definition of what is *standard* and what is *current status* in the housekeeping picture.

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To my knowledge, variations of the system are used currently in setting standards and measuring appearance levels in such divergent types of work places as the mail-handling floors of the United States Post Office department and relatively

The sanitation aspects of raw material or product inspection, say in a food processing plant, is something else again. This is a specialized type of inspection, often involving bacteriological or entomological procedures, and is made to appraise the sanitary quality of raw materials and finished products. Such inspections are set up as a control over operating procedures and are an important part of the sanitarian's responsibilities.

Where management has been able to achieve a clear-cut delineation of the sanitation work load as it pertains to doubtful areas in production and mechanical maintenance operations, and where sanitation operations have been studied and the results incorporated into routine work units, the legitimacy of costs charged to the routine function are easily determined and an accurate running account maintained.

All factors in labor control—budgeting, cost reporting, and cost accountability—are based on predetermined standards, the unit of which is the work routine. This unit is the basis for planning, for analyzing man-hour expenditures, and for revision when necessary.

To some of you in the manufacturing field, where the nature of operations or the organization of sanitation in the plant complicate the forecasting and recording of these costs, the above may seem to be an over-simplification. Some of you, perhaps, are faced with situations where sanitation labor is charged to other functions, such as warehousing or shipping, or where labor from other departments at times is charged to sanitation. The conditions under which these situations develop, however, are generally peculiar to the individual plant, and all of them could not be covered in a general presentation.

Whatever type of recording system is established, there is no point in either inflating or under-reporting sanitation costs to the benefit or disadvantage of any other operation. Certainly, the scheduling and performance of sanitation work should not be made impossible, or even subordinated, in such considerations.

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fills a demand for toe protection in occupations where hazards injurious to toes exist. They fit any shoe, afford maximum toe protection, and like the foot guards do not encase the toe to the discomfort of the worker. (Style #702 illustrated.)

Fibre shin guard (right) style #300.  
Fibre knee-shin guard (far right) style #310.

**ELLWOOD SAFETY APPLIANCE CO.**  
225 SIXTH ST.—NSC ELLWOOD CITY, PA.

[illegible]

National Safety News, September, 1960

## The Company That Cared

—From page 31

Inspecting O-I men found water safety included life boats and power boats, surf boards, 10 lifeguards, a fenced-off beach, and a sand sifter to remove debris that might cut or bruise. Rules forbid animals on the beach.

The bath house has two full-time custodians who check daily for bacteria and fungus growth problems. A four-man beach and grounds crew maintains sanitation controls.

"A Cleveland firm insures Point concessions and annually inspects all equipment for any hazardous conditions," Byers said. "The resort even went so far as to tighten the hub caps on its Model-T car rides and reweld couplings on its miniature railroad train."

An 18-man police department, with four detectives, works under Chief Victor Adcock, former member of the Ohio State Highway Safety Commission and an industrial safety engineer.

The Point's fire department has one fire truck and numerous well-placed extinguishers and hose connections. However, it can call on nearby Sandusky, if necessary.

O-I safety men found that waters surrounding the peninsula are tested for contamination every two weeks or oftener by Sandusky and Erie County health officials. Building codes—electrical inspection, plumbing, and construction—are a Sandusky responsibility, as are food handling and storage inspection and the supplying of drinking water to the Point. In addition, all personnel working at the resort must be examined physically every year.

Roads in the Cedar Point area were tested by the influx of vacationing OnIzers. But these thoroughfares must meet Ohio State Highway Commission requirements and are marked, lined, and maintained to set standards.

Boats, including two ferries, are inspected by the U. S. Coast Guard and can be licensed to operate as public carriers and rental equipment only if the owners adhere to rigid rules.

Further safeguards for its visitors are Cedar Point broadcasts of weather bureau warnings and forecasts, and the use of sirens and

other signals for emergency alarms

Finally, the Point receives expert guidance in public welfare and safety through a hospital administrator in Toledo. Dovetailing with this, O-I had made arrangements—fortunately unnecessary—for anyone hurt seriously at the Point to be taken to the hospital and assistance given. A member of the personnel staff would remain with the patient until the family arrived. Every effort to assist would be made.

"We were determined to emphasize the family week end con-

cept," Byers said. "And in taking measures to protect the family, we got about as many children as we had in previous outings but added three times as many adults—especially the young marrieds and single people."

The slogan, "Have a wonderful time today and every day—by practicing good health and safety measures," became a reality. "It's one thing to go to an outing," Byers said. "It's another to get back home safe and sound. But we think we've got a working formula."

Circle Item No. 76—Reader Service Card



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and economy of feeding  
and ejection**

**PRES-VAC SAFETY FEEDERS** feed blanks to press from a safe distance of 14 inches—**BY AIR!**—maximum protection to operators and handling costs kept at a minimum. Save those fingers. **\$35<sup>00</sup>**



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eject parts safely with each stroke of the press—**BY AIR!** Save those hands. **\$29<sup>00</sup>**

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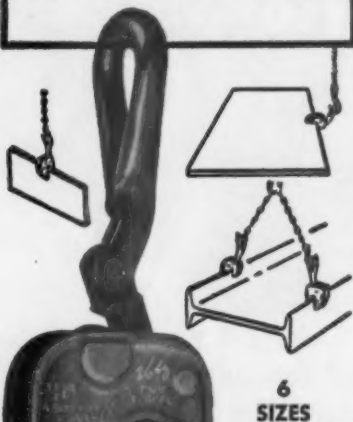


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6  
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Devices described in our  
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Ask for a copy.

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Producers of Drop & Press Forgings  
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## Congress Offensive

—From page 42

Engineering and Operations, South-  
western Electric Power Company,  
Shreveport, La.

Vincent Castrop, chief industrial  
hygienist, General Motors Corp.,  
Warren, Mich., will comment on  
"Integrating Control of Industrial  
Hygiene Hazards with Production  
Methods," before the Automotive  
and Machine Shop Section on  
Thursday afternoon.

"Solid Propellant Handling Safe-  
ty," will be discussed before the  
Aerospace Section by R. M. Sweet,  
production manager, Solid Propel-  
lant Motor Manufacturing Division,  
Aerojet-General Corp., Sacramento,  
Calif. This session is slated for Mon-  
day afternoon.

The Power Press and Forging  
Section will have an opportunity to  
see an illustrated demonstration  
showing how inexpensively many  
good power press and forging safety  
devices can be made and installed.  
Willard A. Dudley, safety engineer,  
Kodak Park Works, Eastman Kodak  
Company, Rochester, N.Y., will offer  
"It's Cheaper Than You  
Think" Thursday afternoon.

"Power Mower Safety in Indus-  
try" is on the Public Employee  
Section docket. Walter J. Chuprin,  
safety engineer, Baltimore Urban  
Renewal & Housing Agency, Hous-  
ing Authority of Baltimore, Balti-  
more, Md., will speak to this group  
on Tuesday afternoon.

"Use Your Head—Stay on Your  
Feet" is a Monday afternoon sym-  
posium for members of the Meat  
Packing, Tanning and Leather Pro-  
ducts Section. Moderator will be  
E. D. Peeler, Jr., safety director,  
Genesco, Nashville, Tenn. Floors,  
platforms, stairs, etc. will be men-  
tioned by Robert Egan, architectural  
engineer, Smith, Brubaker, and  
Egan, Chicago. Miller Y. Hunter,  
Lehigh Safety Shoe Company, Em-  
maus, Pa., will comment on foot-  
wear. Housekeeping is the category  
scheduled for remarks by Howard  
Rebholz, safety director, The Rath  
Packing Company, Waterloo, Iowa;  
and Carl Conklin, safety director,  
Whitehall Leather Co., Whitehall,  
Mich.

Metals Section representatives will  
hear about "Managing a Smelting

Plant Safety Program" from J. D.  
Buhler, plant manager, Mead Works,  
Kaiser Aluminum & Chemical Corp.,  
Spokane, Wash., on Monday after-  
noon.

The Annual Meeting of the Na-  
tional Committee of Religious  
Leaders for Safety will take place  
Monday afternoon. Tuesday morn-  
ing "Religion and Safety: The In-  
fluence of Religion on Family Safe-  
ty" will be discussed.

Fred C. Simmons, technologist,  
U.S. Forest Service, Upper Darby,  
Pa., Wednesday afternoon will moderate a panel concerned with "Log-  
ging Safety, Falling and Bucking."  
This presentation will be illustrated.  
Ralph W. Hartman, safety super-  
visor, Clatsop Division, Crown  
Zellerbach Corp., Seaside, Ore., will  
comment on these operations in the  
West. Bruce P. Mety, woodlands  
manager, Potlatch Forests, Inc.,  
Warren, Ark., will discuss these ac-  
tivities in the South. And John L.  
Turgeon, manager of Quebec Lum-  
berman's Accident Prevention Asso-  
ciation, Quebec, Que., Canada, is  
scheduled to remark on logging  
safety in the Northeast.

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## Calendar Contest For June



"I can swim 'cross the lake," boasted Phil—  
And he struck out alone for the thrill.  
Of course, he had planned  
To arrive safe on land

Mrs. W. R. Mitcham, whose husband is an inspector at Sandia Corporation, Albuquerque, N. M., won the \$100 first prize in the National Safety Council's Safety Limerick contest with this line:

*"Know your limit, then swim it  
with skill."*

The contest appears monthly on the back pages of the Council's calendar. The theme for the June contest was "Plan Ahead."

Second prize of \$50 went to Roger W. Brickey, a salesman and account-

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### ESSENTIAL for outdoor workmen

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ant for V & L Construction Co., Indianapolis, Ind. His entry was:

*"Swimming solo's an act that can  
kill."*

Mrs. J. R. Stegmuller, Hawaiian Pineapple Co., Honolulu, won third prize of \$25 for this line:

*"Found two's safety—a buddy's no  
frill."*

The 30 winners of \$5 prizes are:  
Miss Dortha Schaefer, Payne, Ohio.  
Mrs. John Barron, North Abington, Mass.

Thomas C. Revord, Rex Chain Belt Co., Milwaukee, Wis.

Mrs. Katherine M. Wallis, Shipensburg, Pa.

Mrs. Julie Stangel, Mukwonago, Wis.

Mrs. Fred Schuster, Cleveland, Ohio.

Mrs. William H. Davis, Louisville, Ky.

Mrs. LeRoy Heath, Pinckney, Mich.

Miss Ethel Mulkey, Las Vegas, Nev.

Mrs. John Everitt, East Palo Alto, Calif.

James P. Brown, Berkley, Mich.

Mrs. Rufus Smith, Miami, Fla.

Mrs. Therese Pentek, Health Dept., San Mateo, Calif.

Mrs. Maurine Martin, El Paso, Texas.

Mrs. James M. Bohling, Utica, N. Y.

Mrs. C. L. Duncan, Greenfield, Okla.

Floyd E. Rider, Tropical Farms, Lake Placid, Fla.

Mrs. G. M. Guttero, Manhattan Beach, Calif.

Mrs. Eva S. Pruitt, Manchester, Ga.

M. J. Landon, Kaiser Steel Corp., Fontana, Calif.

Mrs. Albert Rehder, Hawarden, Iowa.

George A. Larson, Minnesota Dept. of Highways, St. Paul.

Fred L. Payne, Liberty Mutual Insurance Co., San Francisco.

Miss Mabel C. Seyfried, Lehigh Portland Cement Co., Catasauqua, Pa.

Mrs. Ray Mellies, Shell Oil Co., Woodriver, Ill.

Mrs. Shirley H. Wilson, Thornton, Colo.

Mrs. H. W. Guenther, Tahlequah, Okla.

Mrs. Ray Dickman, Normandy, Mo.

Miss Agnes C. Lomax (Individual Member), Fall River, Mass.

Mrs. Ben Goddard, B. F. Goodrich Co., Kansas City, Kan.

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\*American Pub. Health Assoc., Oct. 15, 1954

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Circle Item No. 80—Reader Service Card

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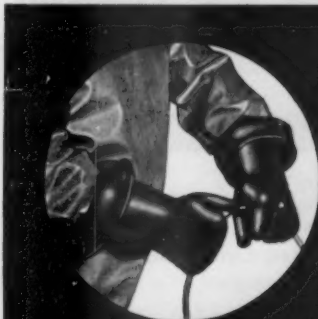
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THE **SURETY** RUBBER CO.  
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## Library

—From page 72

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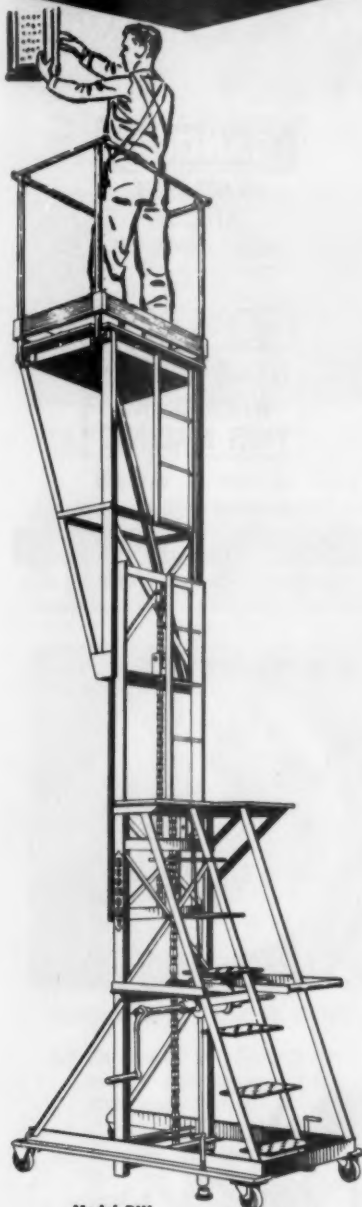
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## Sugar's Safety Harvest

—From page 84

tion, ranch, administration, industrial relations, and medical.

The 330 employees of Hamakua Mill Company plant and grow sugar cane, harvest and transport it to the company's factory, and process it into raw sugar.

Hamakua is a melting pot of races. The work force is comprised of Filipino, Japanese, Portuguese, Hawaiian, Puerto Rican, Korean and Caucasian employees—and interracial mixtures thereof. The largest single racial segment is Filipino.

Sugar cane is grown on over 7,000 acres, with the terrain varying from gently sloping to hilly and rough. Land under cane cultivation extends from an elevation of 200 feet near the coastline to 2,500 feet on the slopes of the Hamakua Coast, island of Hawaii. Average yearly rainfall varies with elevation, about 65 inches near the coast and 150 inches in the upper fields. A complete network of company-constructed roads and bridges covering 71 miles is used in transporting the harvested cane to the factory. In wet weather the road becomes very difficult.

All operations from growing the crop to milling in recent years have become highly mechanized, and production is achieved through the use of considerable automotive equipment. Fifty-seven tractors of all sizes aid in growing and harvesting the cane, and large cranes load it into heavy diesel trucks for trans-

port to the factory. Harvesting, loading, transporting, and milling the cane are shift operations scheduled 24 hours a day on a five-day week.

Hamakua Mill Company is one of 26 Hawaiian plantations which collectively produce over a million tons of sugar annually in Hawaii. As such, it is principally an agricultural enterprise. The company's contribution to Hawaii's total yearly sugar production ranges from 28,000 to 30,000 tons, and the final product—refined at California and Hawaiian and Imperial refineries located in Crockett, Calif., and Sugarland, Texas—reaches millions of American tables after final processing in mainland refineries.

The fact that Hamakua Mill Company is located more than 2,000 miles from the west coast of continental United States may make it unique to the average citizen of the nation. In one respect, however, it does not differ from thousands of mainland business enterprises—its concern for the safety of employees.



"What wise guy put these in the press?"



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*Silence-air*

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SAFETY'S  
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For **NOISE**  
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**Prevents Permanent  
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**MANUFACTURING CORP.**  
WARSAW, INDIANA



## Occupational Health

—From page 62

have been caused by accidental ingestion of various arsenicals. This has been due largely to the availability of these compounds in insect sprays.

Although occupational exposure to arsenic may be by inhalation or skin contact, the most common manifestations are dermatologic. Arsenic trioxide dust dissolves in the moisture of skin folds and mucous membranes to cause inflammatory changes. Inhalation of excessive amounts of dust will lead to perforation of the nasal septum. The author indicates that gastrointestinal and neuritic alterations have been reported on some occasions in the past 20 years, but most reports of systemic involvement arising from occupational exposure predate contemporary literature. Cases of occupational cancer involving skin and respiratory passages have been reported.

Cases of arsenic intoxication have been treated with dimercaprol (BAL). Hyperpigmentation, if present, has not responded to this drug, nor has toxic hepatitis or cases of the associated aplastic anemia.

The author gives 34 references to the study of chronic arsenic intoxication.

### Origin of Pneumonokoniosis

"The Origin of the Term 'Pneumonokoniosis.'" By A. Meiklejohn. *British Journal of Industrial Medicine*. Vol. 17, No. 2. April 1960. Pp. 155-160.

PNEUMOKONIOSIS (pneumonokoniosis or pneumoconiosis) is a term that has frequently been used in the literature in a discussion of dust diseases of the lungs. The nonmedical man has often been confused as to the definition and origin of the term.

Pneumoconiosis is a term used to describe a variety of lung conditions involving inhalation of dust. It simply means there is dust in the lungs. These conditions may or may not be disabling.

Prof. F. A. Zenker of Erlangen, Germany, introduced this term in 1867. The author has translated into English the original German articles describing a condition which he called *siderosis* (due to the inhalation of iron oxide dust).

In Zenker's paper "Iron Lung—Siderosis Pulmonum," nomenclature is discussed, and the generic term *pneumonokoniosis* is introduced. It may be of interest to readers to quote the conclusion of this article, in which many terms used in describing dust conditions of the lungs have been coined.

"For this new form of disease, I coin, by analogy with anthracosis (which designation will soon be adopted generally) the name *siderosis* of the lungs and one can then designate as *phthisis siderotica* the most serious ulcerated forms, as illustrated by our first case (red *phthisis* as opposed to black *phthisis*).

"After we have learned to recognize anthracotic and siderotic lungs, two varieties of the disease, which are identical in all essential points with respect to mode of origin and symptoms and differ only in the nature of inhaled dust, we

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even with  
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Pro-Mo-Lite general-purpose liquid detergent saves you labor and money on a full range of floor cleaning jobs. Excellent for resilient and sealed wood floors... forms no soap scum on contact with free lime in old cement or terrazzo surfaces... for complete stripping or simple daily maintenance... leaves no slippery film... use with muriatic acid to clean and neutralize concrete floors in just ONE operation!



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may subsequently expect that still other comparable disease will be added (for example, that due to the inhalation of tobacco dust that will be established in the next paper).

"It will then be necessary to embrace under a single title all these essentially identical forms of disease. Instead of the long-winded designation employed by me as the title of this article, which appears to me to express best the essence of the matter, the name pneumonokoniosis recommends itself. One would then require distinguished individual forms as pneumonokoniosis anthracotica, siderotica, etc. (or just briefly anthracosis, siderosis)."

Siderosis is due to the inhalation of large particles of iron oxide and produces a red pigmentation, which may produce an X-ray shadow somewhat similar to silicosis. It is nondisabling.

### Hazards of Microwave Radiations

"Hazards of Microwave Radiations." By Kuo-Chiew Quan, B. E. E., M.D. *Industrial Medicine and Surgery*. Vol. 29, No. 7. July 1960. Pp. 315-318.

THIS is an excellent review of general applications and effects of microwave radiation.

The author points out that the human body is capable of dissipating heat at a rate on the order of 0.01 to 0.1 watts per square centimeter body surface. The human body is able to absorb between 100 and 1,000 watts of energy from an outside source, such as microwaves, and still maintain an equilibrium



"That's the boss . . . he's hot-tempered, so don't do anything to upset him."

but at an elevated temperature. When the rate of energy absorption is increased, there will be a continuous temperature rise which will ultimately lead to death.

The radar bands now in common use are the "S" band with a frequency of 2,880 megacycles and a wave length of 10.4 centimeters, and the "X" bands with a frequency of 9,375 megacycles and a wave length of 3.2 centimeters. Investigators have reported that high-intensity 10-centimeter microwaves have killed animals, such as rabbits and rats exposed in a constant 3,000-watt field for 22 to 75 seconds.

Death is attributed to the general increase of body temperature which leads to thermo-paralysis of the respiratory center. Certain tissues of the body are not equipped for heat dissipation and temperature regulation. Examples of these are the eye and the hollow viscera—the gall bladder, urinary bladder, and parts of the gastro-intestinal tract.

Only one controversial fatal case has been reported of accidental exposure to microwaves.

## THE POSITIVE LADDER SAFETY DEVICE LOCKS-IN-A-NOTCH



**Prevents death  
and injuries  
from falling.**

If climber starts to fall, device locks in a deep notch on carrier rail and limits fall to approximately 6 inches — distance between notches.

### LOCKS AUTOMATICALLY and INSTANTLY—HOLDS SECURELY

Will catch and hold workman if he starts to fall, even if unconscious. Cannot slip on down ladder. Requires no attention from climber; he climbs in normal manner. Inexpensive. Easy to install; 3 men can clamp it to ordinary ladder in few hours. Clamps to any rung ladder, peg ladder, pole or framework. No welding or cutting. Notched rail hot-dipped galvanized. Entire equipment rust and corrosion proof. Can be kept free of ice by applying heat inside the carrier rail. In use approx. 11 years. Approved by Safety Engineers and Govt. Agencies throughout country. Patented. Manufactured only by

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Findings of this case have neither been accepted nor rejected. There have been several cases reported of bilateral cataracts in radar repair men. It also has been reported that greater temperature increases occurred in tissues containing metal implants.

The author warns that although actually there is no concrete evidence to prove that injury or damage occurs as the result of casual association with microwave energy, the use of microwave energy should be accompanied with great respect and precautions. The ones who are liable to accidental exposures are operators and service technicians of high-power radar equipment. The author suggests the following precautions:

1. Prevent people from entering radar beams
2. Point radar beams toward unoccupied areas, when possible.
3. Metal screens should be used to shield out the radiation.
4. Lights should be installed to warn personnel that the radar set is on and to indicate the boundaries of the beam.
5. People who work in the vicinity of radar equipment can be sup-

plied with photographic flash bulbs to warn them when they are exposed to intense microwave fields.

6. People with metal implants in their bodies should be excluded from work with such equipment.

In the case of microwave diathermy, the author suggests the testes and the eyes be protected by close-fitting metallic screens and that care should be taken in the application of microwave diathermy to patients with metallic implants to prevent excessive heating.

### Chemical Forms Of Urinary Lead

"Studies on the Chemical Forms of Urinary Lead." By G. T. Dinischiotu, B. Nestorescu, I. C. Radulescu, C. Ionescu, N. Preda, and G. Iutza. *British Journal of Industrial Medicine*. April 1960. Pp. 141-145.

INDIVIDUALS RESPONSIBLE for interpreting results of lead in urine analysis have frequently found there is no correlation between the values of blood lead and urinary lead excretion.

The most frequent procedure of analysis of lead in urine is the coprecipitation of lead with an excess of mineral salt. Various investigators have previously suspected that quantitative separation of the urinary lead was not obtained by this method. Total lead is obtained by ashing the sample to bring all the lead into the mineral form which is then analyzed for lead by a suitable method.

In this investigation, the authors have found that in normal subjects without any exposure to lead the amount of lead excreted in the urine is entirely precipitable lead. When there is increased absorption with or without lead intoxication, the urinary lead appears in two forms as precipitable lead and nonprecipitable lead. It is suggested that the nonprecipitable lead may be present as a natural chelate.

The authors point out that this differentiation of the forms in which lead is excreted in the urine can be useful from a diagnostic point of view. The presence of nonprecipitable lead may be the first sign of a toxic accumulative process without any evidence of clinical symptoms. These values could also give a more indirect index for the appraisal of

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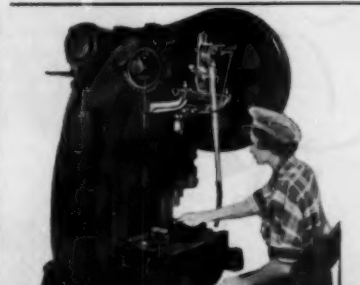


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Circle Item No. 93—Reader Service Card  
National Safety News, September, 1960

Circle Item No. 95—Reader Service Card



the degree of absorption and/or intoxication.

The authors caution that, when lead absorption is high, the urinary lead measured by the coprecipitation method may be too low and the interpretation of these results may be in error. There is a need for a rapid, simple analytical procedure which estimates lead in urine.

### Critique of Noise Control Engineering

"Critique of Our Present Noise Control Engineering Efforts and Accomplishments,"

By C. P. Allen, *American Industrial Hygiene Association Journal*, Volume 21, pp 130-135, April 1960.

THIS PAPER gives an over-all picture of the noise control problem from an engineering standpoint. The author considers the primary means available today for the control and reduction of noise exposure of operating personnel. He discusses the application of these means to several of the more outstanding indoor industrial noise environments.

He has set up noise criteria in a graph form which can be reduced

to a set of engineering limits. Briefly, the engineering limits describe criteria for hearing conservation in that ear protection is recommended for full-time exposure to noise levels above 85 decibels in the 300 to 10,000 frequency bands; ear protection is mandatory for full-time exposures to noise levels above 95 decibels in the 300 to 10,000 frequency bands; ear protection is mandatory for 10 per cent exposure to noise levels above 105 decibels in the 300 to 10,000 frequency bands; and ear protection is mandatory for 1 per cent exposure to noise levels above 115 decibels in the 300 to 10,000 frequency bands.

Higher noise levels are permitted in the 20 to 300 frequency bands, since more low frequency noise can be tolerated than high frequency noise.

The author indicates that frequently noise control measures have been ineffective because attention was given to only a single part of a noise system, whereas it is necessary to consider noise levels throughout the field of operation and the work schedule which governs the movements of the operator.

Noise control is most effective when considered before a factory or process is put into operation. The proper choice of machine location, plant design, and construction materials at the planning stage can reduce, if not eliminate, noise hazards. After a plant or a process has been in operation, noise exposure can be reduced by revising work patterns and using corrective acoustic design or protective devices. Effective enclosures and baffles for noisy machinery require careful design engineering.

The author indicates that although noise control principles are well documented, there are many problems which must be worked out. He mentions particularly that engineering noise exposure limits are based on the effects of long-term exposure to relatively continuous broad band noise. Further study is needed on the effects of short exposures to high level noises as compared to extended exposure low-level noise.

There also is the problem of measuring impulsive noises. True

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Little Rock, Arkansas



peak levels of impulsive noises may be 8 to 12 decibels higher than that measured on a sound level meter. The new peak reading meters are gaining wide acceptance.

The author concludes: It should be the responsibility of engineering and medical staff to be able to recognize the existence of noise hazards through suitable monitoring of working conditions and to advise management as to the need of corrective action."

## Wire from Washington

—From page 8

ter common uses of all natural resources, both human and physical." The Democratic plank states: "We will recognize the special role of our federal government in support of basic and applied research"; the platform specifies research in such fields as space, atomic energy, oceanography, air pollution control, disposal of chemical and radioactive wastes, and health.

The Republican platform also mentions: (1) its satisfaction with the already-achieved "legislative assurance of safety standards for long-shore and harbor workers" (2) a pledge of "action" in the "encouragement of programs to insure on-the-job safety, and encouragement of the states to improve their labor standards legislation" and (3) a pledge of "free movement in interstate commerce of agricultural commodities meeting federal health standards."

The Democratic platform promises to "consider measures for improved organization and procedure for radiation protection and reactor safety, including strengthening the role of the Federal Radiation Council, and the separation of quasi-judicial functions in reactor safety regulations."

**The President.** In his message to the returning Congress, the President urged enactment of two recommendations he had made earlier: (1) "proper financing to avoid delays in our Interstate Highway Program" and (2) "an increase in the aviation fuel tax to facilitate proper financing of our Airways Modernization Program."

**Industrial Safety.** An Atomic Energy Commissioner told the National Association of [State] Attorneys General that it is "almost imperative that uniformity of radiation protection standards be achieved between the federal agencies and the various states." The AEC has issued proposed criteria with which to effectuate P. L. 86-373 (See "Wire," Oct. 1959), which authorizes AEC to share with the states regulation of radiation hazards. These proposed criteria suggest a regulatory system based on the pre-evaluation of haz-

ards and uses before the receipt of radioactive materials. AEC regards such system as "logical and desirable, if not mandatory . . . at the present stage." The state legal officers were told, however, that "as more training, experience, and knowledge on the handling of radioactive materials are developed, it is hoped that some modification in this system will be warranted."

The AEC announced that less than 1 per cent of the fatalities in the atomic energy industry involve radiation. "The great majority of

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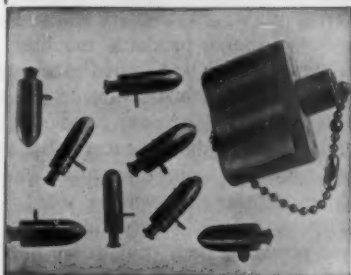
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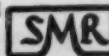
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## CUT DOWN NOISE WITH THE S M R EARSTOPPER



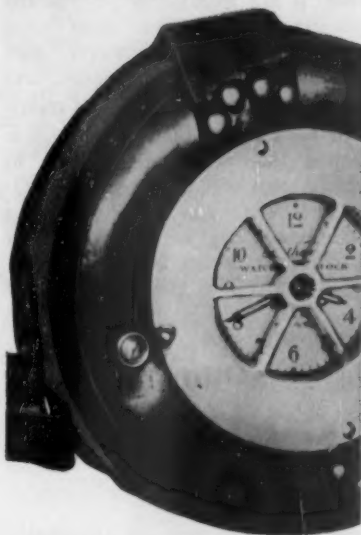
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fatalities in this field are the usual industrial type, from falls, electric shock, and traffic." Among the 114,000 workers in AEC laboratories and plants which are operated by academic and industrial contractors, the first five months of 1960 showed an over-all frequency rate of 1.69 injuries per million man-hours.

Testimony before the Joint Congressional Committee on Atomic Energy shows continuing concern about nuclear accidents. The AFL-CIO charged that the AEC tends to "minimize" dangers and thus weaken preventive efforts. The labor organization testified that the AEC "has not taken adequate steps to meet the radiation hazard problems which we know continue to be serious." According to AFL-CIO testimony, nonmilitary nuclear accidents between 1945-1959 have exposed 40 communities to danger resulting from substantial radiation. AEC's position was that "the probability of reactor accidents having major effects on the public ranged from a chance of one in 100,000 to one in 1,000,000 per year for every large reactor."

The Bureau of Mines issued revised regulations prescribing procedures for testing for permissibility and approving dust collectors for use in connection with rock drilling in coal mines.

The United States Department of Labor issued notice of a proposed rule-making procedure to amend its Hazardous-Occupations Orders to prohibit the employment of minors between 16 and 18 in the occupations of setting up, adjusting, repairing, oiling, or cleaning various machines in four groups of occupations: (1) power-driven metal forming, punching, and shearing machines (2) slaughtering and meat packaging establishments and rendering plants (3) bakery machines and (4) paper-products machines. A similar order was issued to forbid employment of those 16 to 18 years old with circular saws, band saws, and guillotine shears, except that in this instance apprenticeships were to be allowed, as well as student-learners where safety instruction was provided such student learners.

**Labor.** The role of collective bargaining in safety was emphasized by two labor spokesmen at the 13th

International Congress on Occupational Health. The chairman of the AFL-CIO's Standing Committee on Safety and Occupational Health, Richard F. Walsh, stated organized labor's belief that all collective bargaining agreements should provide for joint labor-management health and safety programs; he also emphasized the need for "effective legislation," in part to meet the problem for employees not covered by such agreements. He announced his committee is considering establishment of an Occupational Health and Safety Training Institute. The Metal Trades Department of the organization, through President James A. Brownlow, asserted labor's responsibility to represent its members on occupational health and safety "just as vigorously and thoroughly as we do on more commonly recognized 'bread and butter' issues." He also claimed that state legislation on the prevention of illness and accident hazards "still leaves much to be desired."

**Traffic Safety.** The United States Public Health Service published, in



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Circle Item No. 102—Reader Service Card  
National Safety News, September, 1960

one of its official journals a paper which proposed as a target for 1970 a 50 per cent reduction in the deaths and serious injuries sustained by occupants of cars in highway accidents. The author, Dr. Irwin D. J. Bross, chief of statistics of the Roswell Park Memorial Institute, Buffalo, bases his ten-year plan on data from the Cornell Auto Crash Injury Program. His proposal is a large-scale, coordinated program, comprising the following seven steps:

1. Collection of detailed scientific reports on accident circumstances and resulting injuries.

2. Formulation of a clear understanding of the chain of events leading to the accident trauma.

3. Testing the theory devised in Step Number 2.

4. Consideration of ways to break or modify the undesirable event-chain, and estimation of the potential savings in life or injury so as to establish the relative importance of preventive measures.

5. Translation of such preventive measures into specific design changes (or "hardware") through engineering.

6. Incorporation of the specific design changes into the production line by putting the "hardware" on cars... "This is the present bottleneck," the proposal says. Since auto manufacturers are "in a highly competitive situation where minor price or styling changes might make a big difference in sales," Dr. Bross says that "legislation and public support are needed to protect the manufacturer who is willing to give safety priority over styling and sales appeal."

7. Evaluation of the effectiveness of design changes in actual usage. In this connection, he discusses door locks; the unfavorable effect of hard-top styling; seat belts and their non-acceptance by the public; the high rear structure of trucks; and "delethalization," through removing sharp and pointed objects in a car. He also proposes a mandatory sealed governor, set at 70 miles per hour, for all new cars.

Washington, D. C., issued a proposed regulation which would require on all models of automobiles beginning with 1962, which are registered in the District of Columbia, installation of an anti-pollution device to prevent crankcase gases, fumes, or vapors from reaching the atmosphere. In addition, it is proposed to amend the Traffic and Motor Vehicle Regulations to pro-

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hibit idling of cars, while stationary for more than three minutes, or for more than ten minutes when the weather is below freezing and such idling is for the purpose of warming up the car to operating temperature. These proposed regulations will be subject to a public hearing.

The President approved the Rhodes bill to create a driver license registry, H. R. 5436 (See "Wire," August 1960), and signed it into law as P. L. 86-660. He also signed into law, as P. L. 86-669, the National Capital Transportation Act, H. R. 11135 (See "Wire," August 1960).

**Aviation Safety.** Air commerce in the United States reached new all-time highs in all categories, according to the Federal Aviation Agency. The number of passengers carried rose from 13,060,372 in 1948 to 43,568,139 in 1958 and soared to 49,357,870 in 1959. Cargo rose from 165,366 tons in 1948 to 431,562 in 1958 and reached 501,714 tons in 1959.

FAA issued new regulations requiring all turbine-powered air carrier aircraft, including turbo-props, to be equipped with flight recorders which automatically record air-speed, altitude, vertical acceleration, heading, and time. The purpose is to preserve information which will assist in determining the cause of in-flight "incidents" and accidents.

Notice of a proposed rule-making was issued by FAA, for airmen, dealing especially with vision standards and vision-testing procedures.

FAA also announced proposals to lower the floor of continental air traffic control to 14,500 feet (from the present 24,000 feet). The development of this long-range plan for airspace control is justified, in substantial measure, on the basis of accident prevention.

FAA proposed a rule amendment to establish minimum performance standards for oxygen masks used on civil aircraft.

FAA also set a limit on the amount of airline trip insurance which could be purchased at the Washington National Airport, which it administers. FAA also believes that the cost of insurance to the passenger is inordinately high for the risk involved, "since airline transportation is becoming increasingly safer."



# New SAFETY EQUIPMENT

Product announcements in this section are reviewed for compliance with the advertising policy of the NATIONAL SAFETY NEWS. Inclusion should not, however, be construed as endorsement or approval by the National Safety Council.



## Reel With Continuous Circuit Grounding Lead

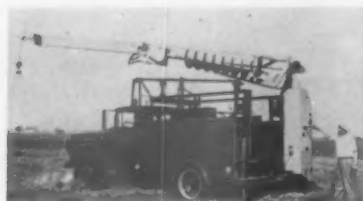
The Cordomatic Static Discharge Reel has a continuous circuit grounding lead

which doesn't rely on the reel alone for grounding connection. A heavy-duty copper spring clamp features a sliding neoprene guard, maintaining a weatherproof and dry grounding connection.

The reel has a universal mounting bracket, permitting overhead mounting with 360 deg. rotation or vertical surface mounting with 180 deg. free swivel. A low-resistance, nylon-covered galvanized steel cable has an adjustable neoprene stopball and locks out at any point along its length. The cable automatically retracts into the reel housing when bulk material transfer is completed.

The reel is finished in black vinyl with chrome trim. Two models are available: Model 700 SDR, 24 ft. long; Model 800 SDR, 45 ft. long.

**Cordomatic, 17th & Indiana Ave., Philadelphia 32, Pa. (Item 301)**



## Turret Derrick Can Rotate 360 Degrees

A universal turret derrick unit has 360 deg.

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Box type heavy-duty steel booms telescope in two sections to give a 21½ ft. extended working radius through a 360 deg. arc range. Maximum capacity is rated safely at 8,000 lbs. Stability comes from hydraulic outriggers and jacks.

With the hydraulic digger unit the operator may stow and unstow the auger automatically and use the digger with either boom section. This enables the operator to stow the digger with the main boom section while lifting and setting large utility poles with no danger to derrick, pole, digger or personnel. The derrick has a 30 ft. sheave height.

Optional equipment includes a four-speed digger, 8,000 lb. capacity winch, glass fiber one-man aerial basket or 500 lb. capacity two-man basket.

**Truco/Denver, 3963 Walnut Street, Denver 5, Colorado (Item 302)**



## Silicone-Treated Wipers, Lens Tissue

Heavy-duty wipers and silicone treated lens tissue are now available. The wipers are packaged with a disposable dispenser, made of heavy kraftboard and

positioned by adhesive on the back or by brass eyelets. The tissue is also available in a self-dispensing disposable box.

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## Combination Can, Bottle Crusher

A combination can and bottle crusher smashes up to a 5-gal. can or gallon jugs. This device is 84 in.

long, 56 in. high and 38 in. wide. It is powered by a 3 hp. motor with thermal overload. Smaller portable units are available.

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### Hoist Assembly for One-Man Overhead Units

An aluminum assembly, attachable to standard scaffolds, lifts and positions materials for one-man overhead installations. This Mechanical Man operates by elevating material placed

on its lifting arms along a vertical track by winch. The lifting arms are then moved horizontally on rollers and raise material to the desired position.

**Up-Right Scaffolds, 1013 Pardee St., Berkeley, Calif. (Item 305)**

### Material Handling Pole Saves Fingers

The IPCO "Hands Off" Material Handling Pole offers protection to hands and fingers when guiding heavy materials into place in the shop or when loading or unloading. It permits the user to stand in the clear. The serrated aluminum head is designed so the hook or thumb end can engage the load in a secure position. The standard length is 50 in. It is furnished with a replaceable white ash handle.

**Industrial Products Co., 2787 N. Fourth St., Philadelphia 33, Pa. (Item 306)**



### Emergency Lantern—8,000 Beam Candle Power

This emergency lantern is dry battery operated and plugs into a standard outlet. When

power is interrupted, the light turns on automatically. It is a 6-volt sealed beam lantern and develops 8,000 beam candle power.

**Ectra Mfg. Co., 4051 Broadway, Kansas City, Mo. (Item 307)**



### Pendant-type Explosion-proof Receptacle

A pendant-type explosionproof re-

ceptacle is now on the market. This CPSHC is designed for ceiling mounting with the dead-end contact feature found in the CPS series of explosionproof units. Arcing

is confined in a plug combustion chamber of the dead-end receptacle. Eliminated are live contacts exposed to atmosphere with volatile, inflammable anaesthetical fumes or explosive vapors. The CPS series has Underwriters' approval for Class I, Groups C and D.

To complete the circuit used with CPP explosion-proof plugs the plug is inserted as far as it will go and rotated a quarter turn to the right and pushed in until fully seated. The circuit is broken by reversal of this procedure.

CPSHC unilets are factory sealed and one model has a steel cover fastened to the sleeve to protect it from dirt and foreign substances. The other model is furnished less cover.

These receptacles are made of polished aluminum and have a 1/2-in. hub with set screw. They are rated at 20 amps, 1 hp, 115 or 230 volts, 60 cycle a.c., single phase and two-wire, three-pole circuit.

Installation involves threading on the 1/2-in. threaded rigid conduit; wires are connected in the large wiring chamber accessible after removing the threaded cover. **Appleton Electric Co., 1701 W. Wellington Ave., Chicago 13, Ill. (Item 308)**



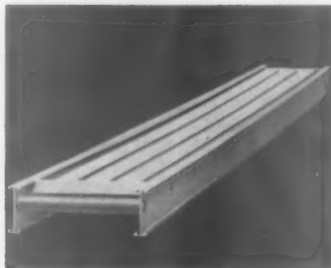
### Steel Scaffold Has Built-in Ladder

This steel scaffold has end frames that are welded assemblies, part of which is a built-in ladder for access to the platform area. A stairway is optional. It locks into position on the inside of the scaffold unit. Plat-

forms and Platform Support Trusses of the Baker Scaffold may be used with Model K.

Height of the single Baker Model K Scaffold is 6 ft. Additional heights may be reached by stacking. Supplemental stabilizing is available when needed.

**Baker-Roos, Inc., Dept. No. K-331 P.O. Box 892, Indianapolis 6, Ind. (Item 309)**



### Aluminum Planks, Stages, Special Rungs, Decking

The Louisville Colonel line of aluminum planks and stages features the Oval-Lok rung to rail construction

and Sure-Foot decking. These planks and stages, designed for one and two-man use, are available in 1,000 and 1,600 lb. capacities, 12 and 20 in. widths, and from 6 to 24-ft. lengths.

**Louisville Ladder Co., 1101 W. Oak St., Louisville, Ky. (Item 310)**

For More Information—Circle Item Number on Reader Service Postcard



### Safety Lift Hook Features Swivel

Used with overhead cranes, the swivel feature of J. & J. Safety Lift Hooks permits dies to be maneuvered 360 deg. around the swivel while the attaching bolt remains tightened. The bolt is tightened against a swivel bushing in the hook body. The hook revolves around the bushing. Bolt threads are self-cleaning. A milled slot in the bolt-end and the removal of the first thread provide a blunt end to the second thread for scraping out dirt when the bolt is being tightened.

These lift hooks are made from one-piece drop forgings of chrome-nickel steel, oil quenched and drawn. Bolts are chrome-vanadium steel, oil quenched, and drawn. The forged hook, bushing and bolt cannot be disassembled. The new hook is available in 3, 6, 9 and 15-ton capacities. Bolt sizes are  $\frac{3}{4}$ , 1,  $1\frac{1}{4}$ , and  $1\frac{1}{2}$  in.

**J. S. Zeman Co., 4501 Lakeside Ave., Cleveland, Ohio (Item 311)**

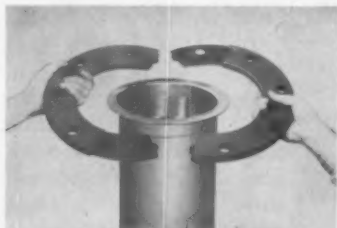


### Dual Purpose Emergency Light

A portable emergency light, triggered automatically by light failure, can also be used as a safety light, since it comes in a carrying case and its only installation is a standard

wall plug. Light Guard has a built-in sealed beam flood-light. Power is supplied by an automatically rechargeable battery (optional) or by a standard dry cell that can burn for more than 12 hours.

**Marathon Industries Inc., Cortland, N. Y. (Item 312)**



### Two-Piece Back-Up Flange

A two-piece back-up flange reduces danger of heavy van stone type flanges sliding down pipes to hurt fingers during installation and take-down. This flange slips apart, so crews don't handle the combined weight of pipe and flange. End leaves interlock to prevent buckling or bending.

The flange is now available in many sizes. A quarter-size scale model of a 6 in. size flange is available to demonstrate this two-piece laminated construction. The flange is available in steel and stainless.

**Farwell Metal Fabrication, 81 West Fairfield, St. Paul, Minn. (Item 313)**

### Portable Welding Curtains

Portable welding curtains help maintain the gas shield in gas shielded arc welding under drafty conditions. Screens are available in four-panel models and in triple and single-curtain models. Each is offered in sizes up to 8 by 8 ft. (for panels in the four-panel model.)

Frames are made of 1-in. tubular steel with rust-proof black oxide finish. Curtains are held in place by lacing through metal grommets. Curtains are available in 12-oz. olive drab fire-resistant duck, yellow neoprene-coated fiberglass, and aluminized asbestos cloth.

Legs raise the screens 3-in. off the ground for ventilation. Ball-bearing casters with 2-in. rubber wheels are available as extra equipment. Platform legs are standard equipment on the single screen and are available as optional equipment on other models.

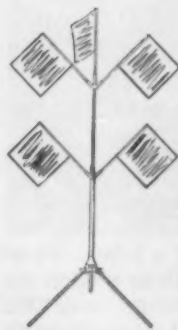
**National Cylinder Gas Div., Chemetron Corp. 840 N. Michigan Ave., Chicago, Ill. (Item 314)**



### Mouth to Mouth Without Contact

The "Venti-Breather" permits mouth-to-mouth rescue breathing by untrained persons without personal contact with the victim. This device fits adults and children. The rescuer breathes through a tube to inflate the victim's lungs. As the victim's lungs deflate, a one-way valve directs his breath from the rescuer's mouth and face.

**Venti-Breather Prod., Inc., 725 Fifteenth St. N. W., Washington 5, D. C. (Item 315)**



### Telescoping Tripod For Safety Equipment

A telescoping tripod has been introduced. It features construction of malleable castings, steel and aluminum; can withstand winds of 25 mph. or more; and has a knurled nut and bronze collet to hold the upper extension column in any position. The legs and extension column can be locked in open or folded position.

Maximum height of the three-flag-high warning level is 11 ft., measuring to the top of the center flag. The low warning level of two flags is 5 ft. above ground. When folded, the unit stands 57 in. high. Warning signs are available for attachments to the lower column. The tripod weighs 25 lbs.

**Standard Signs Inc., 3190 E. 65th St., Cleveland 27, Ohio (Item 316)**

For More Information—Circle Item Number on Reader Service Postcard





### Automatic, Lip-Actuating Dockboard

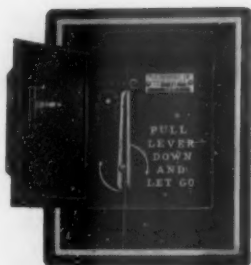
An automatic, lip-actuating feature reportedly increases flexibility, safety and ease

of operation of the Adjust-a-Lip dockboard. Normally, the unit is protected behind steel-faced rubber-backed bumpers. When the unit is released from its level position by the dock attendant, the precision counterbalance raises it to the above-dock position.

The dockboard, with the lip in the protected position, raises until the lip is high enough to swing over the truck bed. Then, the lip automatically extends to its working position and locks. This three-second adjustment is completed by stepping on the dockboard, lowering it to working position where it locks in firm contact with the truck bed.

The lip can be extended or retracted at any time and retracts automatically when the truck pulls out. No attendant is required when the truck is spotted.

**The Kelley Co., 2159G W. Mill Road, Milwaukee 9, Wis. (Item 317)**



### Alarm System Installed in Wall

The Autocall FA Station now can be installed in walls so the box projects  $\frac{3}{4}$  in. Width and height have been trimmed an inch. The face plate is also smaller. This

alarm box is for use with any coded fire alarm system.

**The Autocall Co., Shelby, Ohio (Item 318)**

### Radiation Repellant Coverall

Fire-Bird protective clothing repels radiation heat and direct heating. The coverall type weighs 5 $\frac{1}{4}$  lbs. and is designed to give the wearer freedom of movement even in extreme temperatures.

A high collar protects the face, and a helmet can be worn in the normal way, with or without a visor. An understrip protects the zipper opening, while the smooth, even surface of sleeves and shoulders prevents the possibility of the suit catching wreckage or burning chips.

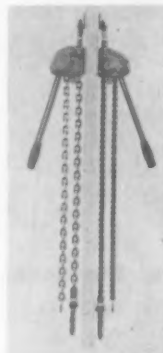
Gloves slide on via closing sleeve lip, and the suit can be donned with boots over normal clothes in a few seconds. Other features include a heavy zip fastener and waist adjustment in the inside of the suit. Legs and footwear are completely protected. The wearer is protected against the discomfort of a sudden rise in temperature by an isolating layer of air.

**Netherlands Trade Commission, 551 Fifth Ave., New York City, N. Y. (Item 319)**

### Guard for Plastic Bowl Filters, Lubricators

Guard-All is spring tempered Parkerized steel wire for guarding plastic bowl filters and lubricators. This device nullifies the force of an explosion, breaking the plastic into smaller pieces, trapping them with a shearing action. Three sizes are available to fit bowls of all manufacture for pipe lines  $\frac{1}{4}$  to 1 in. Hook these devices to the pipe line. The height is adjustable by movable hooks. Space is available to accommodate service on drain cock and button-head fill fittings.

**C. W. Morris Co., 10628 Cloverdale, Detroit 4, Mich. (Item 320)**



### Hoist Won't Free-Chain Under Load

A one-ton hand hoist reportedly will not free-chain under load, even if the control lever is tripped accidentally, nor will it free an interrupted load.

The handle is only 14 in. long and operates in 12 different positions. A 60-lb. pull raises a full load. A 5/16-in. raise or lower per

stroke permits precise spotting of a load. Headroom required is 10 $\frac{3}{4}$  in. The housing design enables an operator to rig the hoist flush with the wall, pole, or other working surface. One lever controls up, down, or free-chaining.

The hoist weighs 13 $\frac{1}{2}$  lbs. Load-carrying parts are made of shock-resistant alloy steel. The hoist stores in 20 by 5 by 5 in. space. It can be assembled and disassembled in 5 minutes.

**Ratcliff Hoist Co., P. O. Box 543 Belmont, Calif. (Item 321)**



### Aluminum Ladders with Box Section Side Rails

The Featherlite Safety-Rated line of aluminum ladders has box section side rails extruded from aluminum alloy. This product also has rung-to-rail suspension in which rungs

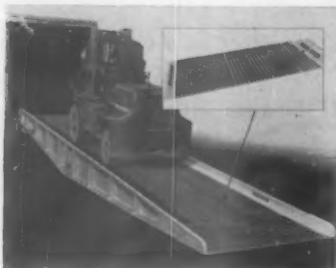
are hydraulically driven into side members and internally expanded to form an integral, immovable joint. This feature, plus Tork-Lok rung construction reportedly eliminates side-sway and racking.

These ladders are available in straight models up to 24 ft., two-section extensions to 44 ft., and three-section extensions to 58 ft. The company also makes aluminum step-ladders for commercial and industrial use.

**Chesley-Sarnes Limited, Essex, Ontario Canada, (Item 322)**

For More Information—Circle Item Number on Reader Service Postcard





### Self-Cleaning Open-Grating Ramp

This open-grating ramp is self-cleaning and has a grating surface from curb to curb throughout the

length of the traction area. Serrated tracks are set into the grating surface for traction and are available in varying tread widths to meet power equipment requirements.

These ramps have lightweight magnesium for one-man handling and are available in 58 and 70-in. widths and in 30 and 36-ft. lengths. Ramp capacities range from 7,000 to 20,000 lbs. or more.

The 4½-in. high curbs prevent power truck runoff. The device has a hydraulic lift system, 18 in. wheels with high-speed bearings and pneumatic tires, spring-loaded safety chains that lock the ramp to the carrier.

**Magline Inc., 1900 Mercer St., Pinconning, Mich. (Item 323)**



### Curtain Enables Use Of Power Equipment

Vinyl plastic curtains are available for use in the handling of refrigerated products. The Clear View Kold Saver curtain enables use of power equipment inside a car or truck with the curtain closed without hindering window clarity. Easy to maintain, flexible hot or cold, the curtains re-

portedly are durable.

**Plastixfilms, 1614 Fourth Ave., South, Minneapolis 4, Minn. (Item 324)**



### Glass Fiber Safety Ladder

Rails of the HIMCO lightweight glass fiber safety ladder are constructed of glass fiber-plastic channels bonded around a prepared hardwood core. The finished rail constitutes a solid sealed unit that is light, strong, and durable. It is electrically nonconductive. The glass fi-

ber surface is splinterproof, impervious to water, paint, and solvents, and is resistant to scratches, acids, alkalis, and other corrosive chemicals.

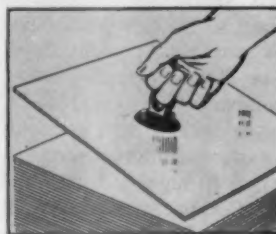
Its yellow safety color is reported permanent. Glass fiber construction causes the rail to return to its original shape after use.

All rungs on this ladder are aluminum. A strip of carborundum grit is permanently imbedded in the stepping surface of each rung for nonslip protection in all kinds of weather.

The extension ladder has the safety lock and "end-less" rope. The rope is made of polypropylene, which will support 3,000 lbs., will not stretch or shrink, and is resistant to corrosive chemicals. After hoisting the extension up an inch, only one finger is required to disengage the lock and brake the lowering of the extension.

When the rope is released, the spring-loaded safety lock snaps back and engages the next rung to eliminate the danger of "run-away ladder." The strength of the glass fiber construction increases 10 to 15 per cent after the first year due to internal curing and thermostatic setting. It is durable and requires no maintenance other than normal care.

**Himco, P. O. Box 54, San Rafael, Calif. (Item 325)**



### Ring Style Vacuum Lifter

A ring style vacuum lifter can pick up small parts, sheets, and strips of metal, plastic, fiber, glass, tile, and other non-porous materials. The lifter is molded in one

piece of neoprene.

It reportedly speeds operation, protects hands from contact with burrs and sharp edges, and keeps soil and perspiration from marking polished and finished surfaces.

This device is worn on the back of the finger. Pressing it to the surface of a sheet or part produces an instant vacuum. It holds securely, releasing with a touch on one of two tabs provided.

**Safety Vacuum Lifter Co., 321 Elm St., Trenton 10, N. J. (Item 326)**



### Magnetic Force Separates Steel Sheets

This Basco device uses magnetic force to separate steel sheets with effort by the worker. The separator sets up a magnetic field causing sheets to repel each other and the top sheets to fan out with a uniform air

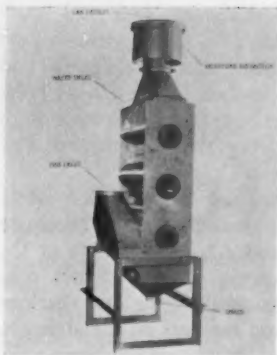
space between them. The worker then removes the top sheet. As it is removed, the sheets below automatically move up.

This unit separates sheet steel regardless of shape or size, whether nested or corrugated, and will separate sheets bonded by oil or preservatives.

These separators are available in 20 models for handling steel gauges from the lightest to ¼ in. in stacks from ¼ in. to 32 in. high. They are guaranteed for life and will be recharged free, if magnetism should be lost through accident. The separators can be easily mounted to floor or work tables.

**E. V. Nielsen Inc., 575 Hope St., Stamford, Conn. (Item 327)**

For More Information—Circle Item Number on Reader Service Postcard



## Wet Scrubber Reported Efficient

The Hydro-Volute wet scrubber is said to develop high efficiencies on fume, dust, and odor problems. Efficiencies (pilot unit tests have shown efficiencies up to 99 per cent on materials as fine as fly ash) are obtained from the scrubbing

achieved by vortexing the gas flow in a series of chambers. Each chamber is shaped to produce a swirling action in the chamber, so the gas is scrubbed with water and wetted dust particles are centrifuged out of the gas stream. Gas flows through venturi-shaped throats between chambers. The venturies increase gas velocity to impinge wetted dust particles against the wall and obtain more violent vortexing.

The 1,000 cfm. scrubber is 5 ft. high, including the moisture extractor on top. Compactness does not hamper the unit's dust handling ability as high efficiencies have been experienced on dust loadings as high as 15 to 20 grains per cubic foot. (Effluent from an asphalt plant containing seven grains per cubic foot produces three tons of dust per eight-hour day.) A 10,000 cfm. unit is 5 x 5 x 19 ft. high.

With no moving parts, electrical wiring, or replaceable filter elements, this scrubber is available in capacities from 1,000 to 60,000 cfm. Constant or intermittent removal of sludge can be accomplished manually, hydraulically, or mechanically. Unit back pressure is slight—3½ in. of water—so existing fans and blowers can handle the additional load. Where necessary, fans can be supplied.

Standard equipment on all units from 1,000 to 10,000 cfm. includes a reservoir, liquid level control, moisture extractor, and one or more water-tight access doors. Units above 12,000 cfm. are similarly equipped, except that no reservoir is required when a settling pond is used. Heavy dust loading and high temperature require a settling pond. Inlet location is optional.

**The Johnson-March Corp., Philadelphia, Pa. (Item 328)**



## Noise Generator

Random Noise Generator, Model 811-B, features higher, more uniform output and a new "pseudo-RMS" metering circuit

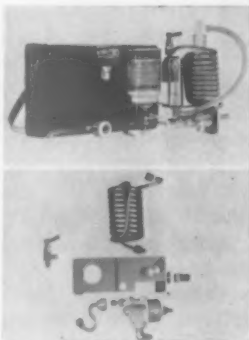
which reads identically on sine waves and white noise.

The 811-B has output of at least 2.5V RMS on all ranges, and response from 2 cps to 1.5 MC. A meter input jack enables its meter to be used for measuring

other signals.

This device is available either as a chassis unit, in a cabinet, or on a 19 in. x 5¼ rack panel.

**H. H. Scott, Inc., 111 Powder Mill Rd., Maynard, Mass. (Item 329)**



## Lightweight Air Sampling Device

An air sampling device small enough to be held in one hand will help industrial hygienists, air pollution and safety experts determine what harmful substances might be in the air.

Weighing less than 4 lbs., this device has a miniature jet engine powered by a can of low-pressure liquefied gas. Other than an "instant action" control valve, the Constant Rate Uni-Jet contains no moving parts.

This product operates with an adjustable "Flo-Set" valve which meters liquid propellant (Freon-12) into a vaporizer coil. Evaporation of the propellant fed at constant rate delivery Freon-12 gas to the aspirator nozzle at constant pressure but provides cooling to reduce evaporation losses from reagent solutions.

Once the valve adjustment screw has been set, instant starting and stopping of sampling is provided by the flip control valve. The Flo-Set Rotameter, calibrated for the range 0 to 51 lpm. and 0 to 10 cfm., shows no deviation in the selected air flow rate from start to finish.

Constant air flow at the 0.1 cfm. rate recommended for the standard impinger is maintained for 90 minutes over an ambient temperature range of 40 to 120 F without readjustment of the valve.

The positive sealing action of the valve permits transportation of the samples in ready-for-action condition without propellant loss. Freon-12 Power Pacs are replaced without disconnecting any other parts or disturbing the valve setting.

This sampler can be carried or worn by a workman to collect a continuous sample of the air breathed without interference in work activity.

Use in explosive or hazardous environments is not restricted; the Uni-Jet does not depend on electrical circuits or moving mechanical parts. The sampler will not create a static charge.

Typical chemical pollutants which can be determined with the instrument include acid fumes, nitrogen oxides, sulfur dioxide, toluene, diisocyanate, phosgene, and hydrogen sulfide.

For dust sampling, where a particle count or radioactivity survey is desired, a standard filter attachment is substituted for the glass impinger. Dust particles caught on the special filter paper are counted or measured in microanalytical equipment.

**Union Industrial Equip. Corp., Port Chester, N. Y. (Item 330)**

For More Information—Circle Item Number on Reader Service Postcard

## NEWS ITEMS



### Holt Manufacturing Company

This firm has opened a new plant, designed for continuous flow production of floor maintenance machines. This operation is now supply-

ing the firm's Oakland, Calif., and Newark, N.J., plants with gears, floor machine parts and sub-assemblies. Its address is 10702—46th St., Tampa, Fla.



Frank S. Drake

### Falcon Alarm Company, Inc.

Frank S. Drake is now director of marketing for this firm, manufacturers of Freon-powered signaling devices for home, marine and industrial safety. He succeeds Charles P. Sagar, formerly vice-president of Falcon.

Mr. Drake will be responsible for sales and promotion of the firm's products. Previously, he has been associated with Colgate Palmolive Company in New York City, Proctor & Gamble Company, Cincinnati, Ohio, and the O-CEL-O Division of General Mills, Inc., Buffalo, N. Y.

He will work from the company's plant and home office at 243 Broad St., Summit, N. J.

### Sawyer Tower Inc.

Horace B. Hills of Auburndale, Mass., now is general sales manager of this company's Protective Clothing Division. He joined the firm after serving as manager, Consumer Products Division, Farrington Manufacturing Company, Needham, Mass.



Horace B. Hills



W. Ben Flanigan

### The Gamewell Co.

W. Ben Flanigan has been appointed vice-president of the Gamewell Company. He has been with his firm since separation from the U.S. Navy in 1946. He was a sales engineer in the company's Chicago office until 1952, when he became district manager for that area. In 1955 he moved into Gamewell's New York office as Eastern Region sales manager. In 1959 he was promoted to general sales manager at the firm's headquarters in Newton Upper Falls, Mass.

### International Shoe Company

Edward B. Lang, formerly advertising and sales promotion manager for this firm's Hy-Test Safety Shoe Division, is now sales coordinator for the company's three general line branches, including Roberts, Johnson & Rand, Friedman-Shelby, and Peters divisions. Vincent V. Loduca succeeds Mr. Lang as coordinator for sales and advertising for Hy-Test.



William I. Hollar

### Jomac-North Inc.

William I. Hollar, general manager of this company, has been elected vice-president of the firm, maker of protective gloves and clothing. Hollar joined Jomac as general manager of the Warsaw, Ind., plant in 1953. Previously, he had been engineer and production

supervisor of the Fabricast Division, General Motors Corp., Bedford, Ind.

### Mine Safety Appliances Company

Nelson W. Hartz is the newly appointed director of marketing for industrial operations of this firm in Pittsburgh, Pa. John P. Sherwin has been named sales manager of the company's Technical Products Division, succeeding Mr. Hartz in that post.

Mr. Hartz joined MSA in 1934 and was named product line manager for instruments in 1947 and sales manager for Technical Products in 1957. Mr. Sherwin joined the firm in 1946 as an instrument field engineer. He was appointed assistant sales manager of Technical Products in 1957.



Nelson W. Hartz



John P. Sherwin

### Ansul Chemical Company

Robert W. Reinicke is now vice-president of operations for this company. He comes to Ansul from Ekco Products in Chicago. General managers of the firm's three product line divisions—chemicals, refrigeration components, and fire equipment—will be responsible to Reinicke.



Robert W. Reinicke





# TRADE PUBLICATIONS

These trade publications will keep you up-to-the-minute on new developments in safety equipment and health products. All catalogs are free, and will be sent without obligation. Just circle publication number on the Reader Service Postcard.

## Material Handling Equipment

Covered are Chaney Products bridge ramp and refrigerator car ramp (15,000 lbs. capacities). Specifications, plus a simplified formula for determining the span of gap and height differential between railroad car floor and platform, are shown. Also described are motor and trailer truck ramps, available in various sizes, in 10,000 lbs. and 15,000 lbs. capacities and the "Multi-Stak" pallet stacker units. These are all-steel pallets with self-supporting standards which permit tiering of fragile, soft, irregularly-shaped and mixed merchandise. Introduced are pallet rollers available in swivel and dolly types. Chaney Products, Box 425, Elizabeth, N.J.

For more details circle No. 400  
on enclosed return postal card.

## Arc Welding

This 80-page booklet gives essentials for proper procedures, examples of welds, welding metals, symbols, cost-saving hints. An illustrated, vest-pocket guide to better welds. Hobart Brothers Co., Hobart Square, Troy, Ohio.

For more details circle No. 401  
on enclosed return postal card.

## Fire Protection

Fire protection systems for printing plants are described in an illustrated bulletin (C161-3860) available from the Cardox Div. of Chemetron Corp., 840 N. Michigan Ave., Chicago 11. Outlined are proper methods of protecting presses, reel rooms, ink mist filters, stereo remelt posts, ink mix and storage rooms and electrical equipment in printing plants. Systems discussed are those engineered to stop fires before they cause serious damage with resulting shut-downs.

For more details circle No. 402  
on enclosed return postal card.

## Rubber Bumpers

Bulletin H-24, four pages, released by Hewitt-Robins Inc., 666 Glenbrook Rd., Stamford, Conn., tells about precision made bumpers for maximum safety absorbing impact. Applications include loading platform protection, dock and truck tail gate fendering, and others.

For more details circle No. 403  
on enclosed return postal card.

## Safety Paints

These high-visibility safety paints have been tested and are said to be four times brighter than regular safety colors. Government tested, they are used on military and civilian aircraft for identification. Available in eight colors, they brush, spray or roll on. Also available in aerosol containers. Useful for marking indoor and outdoor hazards and safety equipment such as hard hats, first aid kits, warning devices, signs, emergency valves and fire-fighting equipment. E. D. Bullard Co., 2660 Bridgeway, Sausalito, Calif.

For more details circle No. 404  
on enclosed return postal card.

## Locks and Latches

Illustrated, 32-page brochure describing four series of mortise locks. Available from Sargent & Co., 45 Water St., New Haven 9, Conn. Among items discussed is their "new look" screwless trim to match locks, color trim, and miscellaneous locks.

For more details circle No. 405  
on enclosed return postal card.

## Liquid Synthetic Rubber

A protective coating for critical surfaces subject to corrosion. Based on DuPont Hypalon resin, this coating is applied by conventional painting methods. Cures to a tough, elastic film resistant to heat, chemicals, and ozone. The Wilbur and Williams Co., 130 Lincoln St., Brighton 35, Mass.

For more details circle No. 406  
on enclosed return postal card.

## Sound Control

This 12-page catalog illustrates typical sound control applications with illustrated graphs showing reduction of noise in decibels, also reduction of noise distinguished by the human ear. Described are applications of silencers and diffusers on guidance ground equipment, aircraft components, marine components, and air motors; along with industrial equipment such as welding, foundry, presses, tools and assembly. Allied Witan Co., 12500 Sellaire Road, Cleveland 35, Ohio.

For more details circle No. 407  
on enclosed return postal card.

## Industrial Clothing

M. Setlow and Son Inc., P.O. Box 1748, New Haven, Conn., has released a catalog describing types of cotton work clothing. Included are Chem-Wear acid and caustic resistant, flameproof, and other work garments. One item mentioned is hooded coveralls, of importance to those interested in boiler maintenance.

For more details circle No. 408  
on enclosed return postal card.

## Magnetic Gages

Catalog No. 388 covers the features, models, construction, and operation of the Jerguson Magnetic Gages. These liquid level gages are designed for use where glass and its gaskets cannot be tolerated and where a sealed container for the liquid is preferable. Jerguson Gage & Valve Co., 80 Adams St., Burlington, Mass.

For more details circle No. 409  
on enclosed return postal card.

## Industrial Cleaners

Covered in this eight-page brochure are metal surface polish, liquid degreasers, immersion cleaners, carbon remover, and paint solvents. Included are applications, photos, specifications. Brulin & Co., Inc., 2939 Columbia Ave., Indianapolis 7, Ind.

For more details circle No. 410  
on enclosed return postal card.

## Condulets for Corrosive Locations

This 20-page Crouse-Hinds bulletin has been reissued with additional information on the electrical equipment the company manufactures for use under different conditions causing corrosion. Corrosive substances are listed in tabular form with appropriate corrosion-resistant metals and finishes used in Crouse-Hinds Condulets. Also contained are descriptions of the metals and finishes, and includes listings of Plast-A-Coat Condulets for hazardous and non-hazardous locations. Crouse-Hinds Co., Syracuse 1, New York.

For more details circle No. 411  
on enclosed return postal card.

## Direct-Wire Television

Issued by Argus Cameras, Inc., 405 Fourth Street, Ann Arbor, Mich., this brochure presents ideas for pilferage protection, security, personnel training, remote observation, and inter-departmental communications. The publication tells how, with a minimum of investment, direct-wire TV can become a tool of business and industry.

For more details circle No. 412  
on enclosed return postal card.

## Lift Table

A hydraulic-powered scissors-type lift table with 24,000 lb capacity is described in this literature. This table extends to 40 in. from a collapsed height of 8½ in. It can be installed next to a machine, or recessed in floor. It is available in various size platforms, tops for turntables, conveyors, etc. Southworth Machine Co., 30 Warren Ave., Portland 5, Maine.

For more details circle No. 413  
on enclosed return postal card.

## Flexible Tubing

Description of the varied forms, major advantages and uses of flexible tubing are found in this manual, released by Flexible Tubing Corp., Guilford 2, Conn. Flexible tubing is a synthetic material or fabric cover supported by a coiled spring. The material may be treated cotton, glass fiber, dacron, nylon or some other material, depending on the application. Among the areas where flexible tubing can be used are vacuum cleaning—home, industrial, swimming pool; heating and air conditioning systems; mine and tunnel ventilation; aircraft fuel, ventilation and de-icing; missile ductwork; in-plant venting of dust, fumes and moisture. Among the advantages are lightweight, flexibility, fast installation, broad temperature range, flame resistance, waterproof, abrasion resistance, chemical resistance, smooth airflow, and choice of sizes.

For more details circle No. 414  
on enclosed return postal card.



### D-C Crane Control

The combination control and rectifier mentioned in this literature can be used to cut maintenance to a minimum. Using static rectifiers for series-wound d-c crane motor and brake, it is said to afford better stability for safe lowering of heavy loads. No load-retarding or indicating devices are reported needed. Square D Co., 6060 Rivard St., Detroit 11, Mich.

For more details circle No. 415  
on enclosed return postal card.

### Aircraft - Cables - Tie Rods

Included in catalog A-4 is information on various aircraft cables, swaged cable terminals, specification cable assemblies, aircraft tie rods and terminals. Of special interest to aircraft companies, air lines, maintenance depots, and industrial designers using aircraft cables and assemblies for machine parts. Macwhythe Wire Rope Co., Kenosha, Wis.

For more details circle No. 416  
on enclosed return postal card.

### Gripper Arms

This publication suggests that you bolt these arm carriers to any hydraulic lift truck clamp, and you can pick up cartons, bales, crates, rolls without pallets. Shape-up bars prevent crushing of corner cartons. All four arms have adjustable toe-in. No load-sag. Little Giant Products, Inc., 1530 N. Adams St., Peoria 3, Ill.

For more details circle No. 417  
on enclosed return postal card.

### Radiation Alarm

As mentioned in the literature, this pocket-size, dose-rate alarm responds to radiation with a loud whine which rises in pitch as radiation intensity increases—a warning sound audible many feet away. It uses a solid sensing element which responds to gamma and X-radiation, without saturation, at intensity levels from below 0.5r/hr. to above 500r/hr. Transistorized, rugged, the alarm weighs less than 7 oz. including sound alarm and batteries. Controls for Radiation, Inc., 130 Alewife Brook Parkway, Cambridge 40, Mass.

For more details circle No. 418  
on enclosed return postal card.

### Industrial Maintenance

Covered in this six-page, illustrated folder are Wyandotte Chemical products for machinery and equipment maintenance, circulation cleaning, hot soak tank cleaning, steam cleaning and paint-stripping. Included are cleaning of machine tools, lathes, punch presses, printing presses, textile and paper mill equipment. Circulation cleaning includes removal of oil, scale, slime, rust and corrosion from pipelines, heat exchangers, air conditioning and refrigeration equipment, oxygen lines and boilers as well as petroleum refinery equipment. Wyandotte Chemicals Corp., J. B. Ford Div., Wyandotte, Mich.

For more details circle No. 419  
on enclosed return postal card.

### Relief Valves

Bulletin 5200-A, Cochrane Corp., 3130 N. 17 St., Philadelphia 32, Pa., covers multi-port relief valves for automatic relief of over-pressure in steam, air, and gas systems. The valves have from 3 to 21 internal spring-loaded adjustable disks.

For more details circle No. 420  
on enclosed return postal card.

### Lint-Free Clothing

This clothing made of 100 per cent DuPont Dacron polyester fiber according to the manufacturer, has an anti-static treatment which is durable through numerous launderings and dry cleanings. It will not

cling to or climb up on the wearer in humid weather. It absorbs moisture from the wearer's skin and draws it to the surface of the fabric where it evaporates. The clothing will not support combustion, has high abrasion resistance, and resists most acids and caustics. Milburn Co., 3246 East Woodbridge, Detroit 7, Mich.

For more details circle No. 421  
on enclosed return postal card.

### Portable Cleaner

Equipped with a two-speed electric motor, the hand-type cleaner described delivers a blast of clean air that removes dust and lint from motors and machines. It reaches places that cannot be touched by hand or compressed air. A flick of the switch will convert it to a gentle blowing or suction action for small motors, switchboards, instruments and other light duty jobs. Three models are available. Included with each is a blower nozzle and 30 ft. of cord. Standard motor is 115 volt ac-dc, Universal type. Ace-Sycamore, Inc., 448 DeKalb Ave., Sycamore, Ill.

For more details circle No. 422  
on enclosed return postal card.

### Metal Processing Chemicals

Kelite Corp., 81 Industrial Road, Berkeley Heights, N. J., offers bulletins on Kelite Koteleen and Keykote 25, a pre-organic finish composition for use on such products as instruments, fabricated metals, and equipment. Keykote 25 is a powdered phosphate composition and not an iron phosphate although it competes in that class. It has iron for ductility, zinc for galvanic protection, manganese for hardness, and ferromolybdate for passivity. It is said to result in superior paint bonding and corrosion resistance at low cost. Koteleen is a liquid detergent used in conjunction with Keykote 25 to form an active cleaning bath. Removing soil, mill oils, and rust preventative oils, it improves the quality of the coatings.

For more details circle No. 423  
on enclosed return postal card.

### Instruction Book on Sterile Bandage

A new edition of "Clinical Use of Gauz-tex," originally published in 1958, is offered on request by General Bandages, Inc., 8300 Lehigh Ave., Morton Grove, Ill. This 16-page booklet uses line drawings to show first aid uses for the company's sterile self-adhering bandage.

For more details circle No. 424  
on enclosed return postal card.

### Automatic Radioactive Samples

This four-page brochure concerns the Nuclear-Chicago automatic sample changer for low level solid beta emitting radioactive samples. C115 Automatic Sample Changer features net background of two counts per minute. This low background makes it possible to measure with an automatic system samples producing only two to three counts per minute in the detector. The detector is a gas flow type with a window density less than 150 micrograms/cm<sup>2</sup> to permit the entrance of soft betas into the counting chamber without appreciable loss. Nuclear-Chicago Corp., 350 East Howard Ave., Des Plaines, Ill.

For more details circle No. 425  
on enclosed return postal card.

### Fire Hose

Published by the Fyr-Fyter Co., 221 Crane St., Dayton, Ohio, this four-page folder contains feature and specification facts on the company's line of hose styles available for municipal and volunteer fire departments. Featured is their "bonded" 100 per cent Dacron double jacket hose.

Rubber bonded, the inner and outer jackets cannot slip or rub to cause concealed wear. This fabrication method is said to extend service life five times that of ordinary cotton hose.

For more details circle No. 426  
on enclosed return postal card.

### Name Plates

Literature is available providing information about name plates for identification of switches, pipes, cables; signs and instruction plates for sprinkler systems, control panels to meet requirements of city and state codes; and many other uses where identification is needed. Seton Name Plate Co., 431 West Rock Avenue, New Haven 15, Conn.

For more details circle No. 427  
on enclosed return postal card.

### Dust Separators

Released by The Day Co., 810 Third Ave., N.E., Minneapolis, Minn., Bulletin D-20 details performance data, installation photos, selection and dimensions of their dust separators. Using the principle of dust separation by cyclonic action plus the patented internal "skimmers," a two-stage separation is produced in the collector. There are no moving parts, and the collectors are furnished in 22 standard sizes to handle air volumes from 250 cfm to 23,750 cfm of air.

For more details circle No. 428  
on enclosed return postal card.

### Steel Shelving

Catalog 2400, available from Penco Div., Alan Wood Steel Co., 200 Brower Ave., Oak, Pa., contains information on their boltless T-line shelving, angle shelving, tool storage inserts, drawer case units, bin units, custom shelving arrangements and truck shelving. Included is a section on steel lockers, storage cabinets, and book-case shelving. Typical applications along with tables of dimensions and capacities are shown.

For more details circle No. 429  
on enclosed return postal card.

### Heat Exchanger

Available from Heat Recovery Corp., 671 Mt. Prospect Avenue, Newark 4, N. J., this brochure describes the "Rotary-X-Changer" heat exchanger designed to recover heat from contaminated exhaust air or cool incoming fresh air into refrigerator spaces.

For more details circle No. 430  
on enclosed return postal card.

### Rubber Stair Treads

This folder features in color the R. C. Musson Rubber Company's rubber stair treads. Also illustrated are the Musson Perforated Entrance mats, designed with smaller perforations to cope with the heels of women's shoes. R. C. Musson Co., 1320 Archwood Ave., Akron 6, Ohio.

For more details circle No. 431  
on enclosed return postal card.

### Crab Tractor

A brochure featuring a new model of the Napco Crab four-wheel drive, four-wheel-steer industrial and construction tractor has been made available by the Construction Equipment Div. of Napco Industries, Inc., 834 North Seventh Street, Minneapolis 11, Minn. Featured is the six-cylinder model with a fiber glass hood and built-in headlights. Also covered are the variety of attachments for both front and rear. Included are loader, dozer blade, backhoe, forklift, snow plow, winch, pipe laying side boom, tow hook and street sweeper.

For more details circle No. 432  
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National Safety News  
September, 1960



# Use a PLASTIC filter for Arc Welding?

# NO! NO!

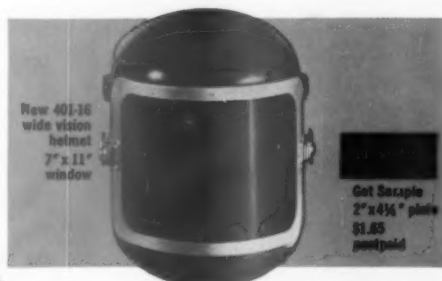
• Until now, the answer has been emphatically no! But for the first time anywhere, a plastic plate is available that will filter the harmful ultra-violet and infrared rays of arc welding—and filter them to the same degree as the rigid standards set for glass in Federal specifications. Years of research have resulted in CESCO's new PLASTI-WELD\* filters, which give arc welders these unusual advantages:

#### ● LARGE WINDOW AREA

In addition to the standard size 2" x 4 1/4", PLASTI-WELD FILTERS may be used in CESCO 401-16 and 403-16 helmets. These give 77 square inches of viewing area, *curved* for panoramic vision.

#### ● LESS FREQUENT REPLACEMENT

The slightly higher price of PLASTI-WELD filters is greatly offset by their ability to outlast glass, *as much as 6 to 1*. Less breakage from dropping, impact or thermal shock.



#### ● HIGHER VISIBILITY

Comments from hundreds of welders who field-tested PLASTI-WELD filters state that they give "unusual clarity—sharper definition of outline." Result: better output, higher quality work.

#### ● LIGHT WEIGHT

The 2" x 4 1/4" PLASTI-WELD filter, encased in its own rubber gasket, weighs less than one ounce, compared with two-and-a-half ounces for the average glass plate and cover glass. Regular lens gasket is not required. 7" x 11" PLASTI-WELD filter weighs only four-and-a-half ounces.



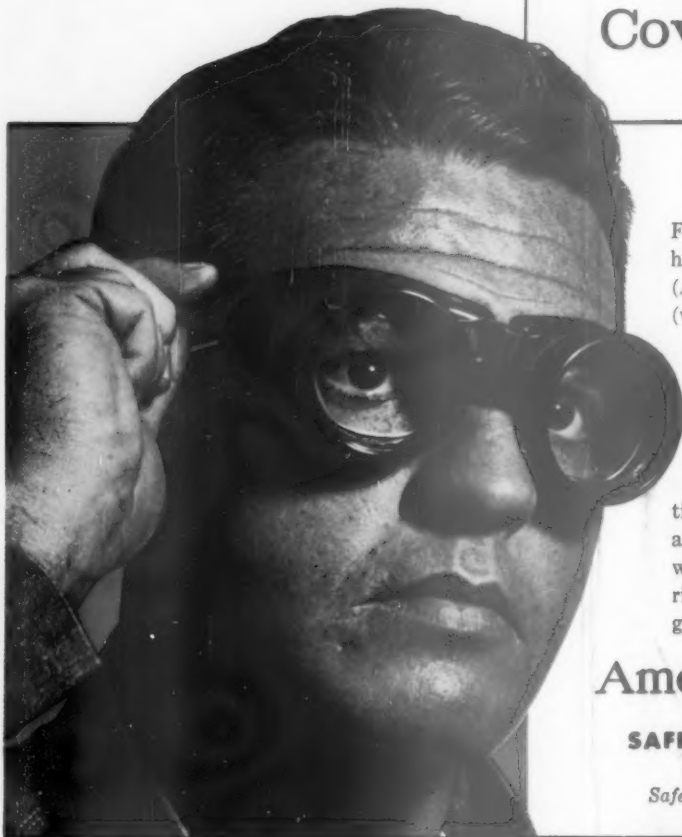
FOR MORE INFORMATION about CESCO PLASTI-WELD filters, contact your nearby CESCO distributor or write our Chicago office

\*Pat. Pending

# CESCO FOR SAFETY

CHICAGO EYE SHIELD COMPANY • 2705 West Roscoe Street, Chicago 16, Illinois

- FITS PRACTICALLY EVERYONE
- WIDE RANGE OF VISION
- EXCEEDS GOVERNMENT SPECS



## Solve protection and fitting problems with the New AO Coverglas Goggle

For the worker who needs impact protection over his regular glasses, this AO Coverglas Goggle (AO 325), does a real job. It fits 99% of workers — (we've tested it widely and know). The 50 mm. round lenses simplify inventories because that's the size which is standard in all other cup goggles used regularly. The frames of black cellulose acetate are better looking than those on previous models. You'll find that the perforated aluminum side shields step up ventilation considerably and they will not corrode. Standard bridge is leather and adjustable. Also available with rigid bar bridge as 325B and with adjustable rigid bridge as 325R. For welders model of this goggle ask for No. 329.

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### Welcome Your Plant Visitors Thoughtfully with NEW VISITATION Safety Glasses!

Eye accidents to plant visitors can be costly — and embarrassing. This new face formed spectacle (F790) for temporary and light exposures offers visitors comfortable, lightweight, optically correct eye protection. And the cost is very low — this is the thriftiest priced goggle in the entire American Optical line. Fits over personal glasses. Lens is .020" thick acetate — clear or green. Temples are clear crystal spatula types. Hand your visitors the F790 in the scratch-free cellophane envelope. It's good public relations — and good business!

NOTE: Packaged in bulk in any quantity.

*Always insist on  Trademarked Safety Products*



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